

**U.S. 20**  
**Woodbury, Ida, and Sac Counties, Iowa**  
Project Number: NHS-20-1(77)—19-97

**ENVIRONMENTAL ASSESSMENT**

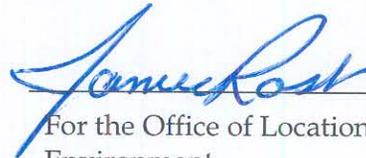
Submitted Pursuant to 42 USC 4332(2)(c)  
and 49 USC 303  
by the

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
And  
IOWA DEPARTMENT OF TRANSPORTATION  
OFFICE OF LOCATION AND ENVIRONMENT

The signatures are considered acceptance of the general project location and concepts described in the environmental document unless otherwise specified by the approving officials. However, such approval does not commit to approve any future grant requests to fund the Preferred Alternative.



For the Iowa Division Administrator  
Federal Highway Administration



For the Office of Location and  
Environment  
Iowa Department of Transportation

*Aug. 4, 2008*

\_\_\_\_\_   
Date of Approval for Public Availability

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**PREFACE**

The Transportation Equity Act of the 21<sup>st</sup> Century (TEA-21) (23 CFR) mandated environmental streamlining in order to improve transportation project delivery without compromising environmental protection. In accordance with TEA-21, the environmental review process for this project has been documented as a Streamlined Environmental Assessment (EA). This document addresses only those resources or features that apply to the project. This allowed study and discussion of resources present in the study area, rather than expend effort on resources that were either not present or not impacted. Although not all resources are discussed in the EA, they were considered during the planning process and are documented in the Streamlined Resource Summary, shown in Appendix A.

The following table shows the resources considered during the environmental review for this project. The first column with a check means the resource is present in the project area. The second column with a check means the impact to the resource warrants more discussion in this document. The other listed resources have been reviewed and are included in the Streamlined Resource Summary.

SOCIOECONOMIC	NATURAL ENVIRONMENT
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Land Use <input checked="" type="checkbox"/> <input type="checkbox"/> Community Cohesion <input checked="" type="checkbox"/> <input type="checkbox"/> Churches and Schools <input type="checkbox"/> <input type="checkbox"/> Environmental Justice <input checked="" type="checkbox"/> <input type="checkbox"/> Economic <input checked="" type="checkbox"/> <input type="checkbox"/> Joint Development <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Parklands and Recreational Areas <input type="checkbox"/> <input type="checkbox"/> Bicycle and Pedestrian Facilities <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Right-of-Way <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Relocation Potential <input checked="" type="checkbox"/> <input type="checkbox"/> Construction and Emergency Routes <input checked="" type="checkbox"/> <input type="checkbox"/> Transportation <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Wetlands <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Surface Waters and Water Quality <input type="checkbox"/> <input type="checkbox"/> Wild and Scenic Rivers <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Floodplains <input checked="" type="checkbox"/> <input type="checkbox"/> Wildlife and Habitat <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Threatened and Endangered Species <input checked="" type="checkbox"/> <input type="checkbox"/> Woodlands <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Farmlands
CULTURAL	PHYSICAL
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Historical Sites or Districts <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Archaeological Sites <input type="checkbox"/> <input type="checkbox"/> Cemeteries	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Noise <input checked="" type="checkbox"/> <input type="checkbox"/> Air Quality <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Mobile Source Air Toxics (MSATs) <input checked="" type="checkbox"/> <input type="checkbox"/> Energy <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Contaminated and Regulated Materials Sites <input checked="" type="checkbox"/> <input type="checkbox"/> Visual <input checked="" type="checkbox"/> <input type="checkbox"/> Utilities
<input type="checkbox"/> <b>CONTROVERSY POTENTIAL:</b> Low. City of Correctionville supports through-town widening. Residents have been largely supportive of the project.	
<input type="checkbox"/> <b>Section 4(f):</b> 1 impact at Van Houten House, determined to be de minimis. Coordination is included in Appendix C.	

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# Acronyms and Abbreviations

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AST	aboveground storage tank
Berger	The Louis Berger Group Inc.
BMP	best management practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIN	commercial and industrial network
dB	decibels
dba	A-weighted decibels
EA	environmental assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAM	farmed wetland
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FR	<i>Federal Register</i>
GIS	geographic information system
HUC	hydrologic unit
HUD	U.S. Department of Housing and Urban Development
IA 140	Iowa 140
Illinois DOT	Illinois Department of Transportation
Iowa DNR	Iowa Department of Natural Resources
Iowa DOT	Iowa Department of Transportation
IRIS	Integrated Risk Information System (U.S. EPA)
Leq(h)	energy equivalent sound level
MSAT	Mobile Source Air Toxics
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act, as amended
NHS	National Highway System
NPDES	National Pollutant Discharge Elimination System
NPRM	Notice of Proposed Rulemaking
NRHP	National Register of Historic Places
NWI	National Wetland Inventory (U.S. Fish and Wildlife Service)
PEM	palustrine emergent wetlands
PFO	palustrine forested wetlands
PUB	palustrine unconsolidated bottom
REC	recognized environmental concern
SAC	Sac County, Iowa
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users
SHPO	State Historic Preservation Office
SIMPCO	Siouxland Interstate Metropolitan Planning Council

SSURGO	Soil Survey Geographic Database (U.S. Department of Agriculture)
SWCD	Soil and Water Conservation District
T and E	threatened and endangered
TMDL	total maximum daily load
TNM	traffic noise model
U.S. 20	U.S. Highway 20
U.S. 71	U.S. Highway 71
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
WB	Woodbury County, Iowa
WMA	Wildlife Management Area

## SECTION 1

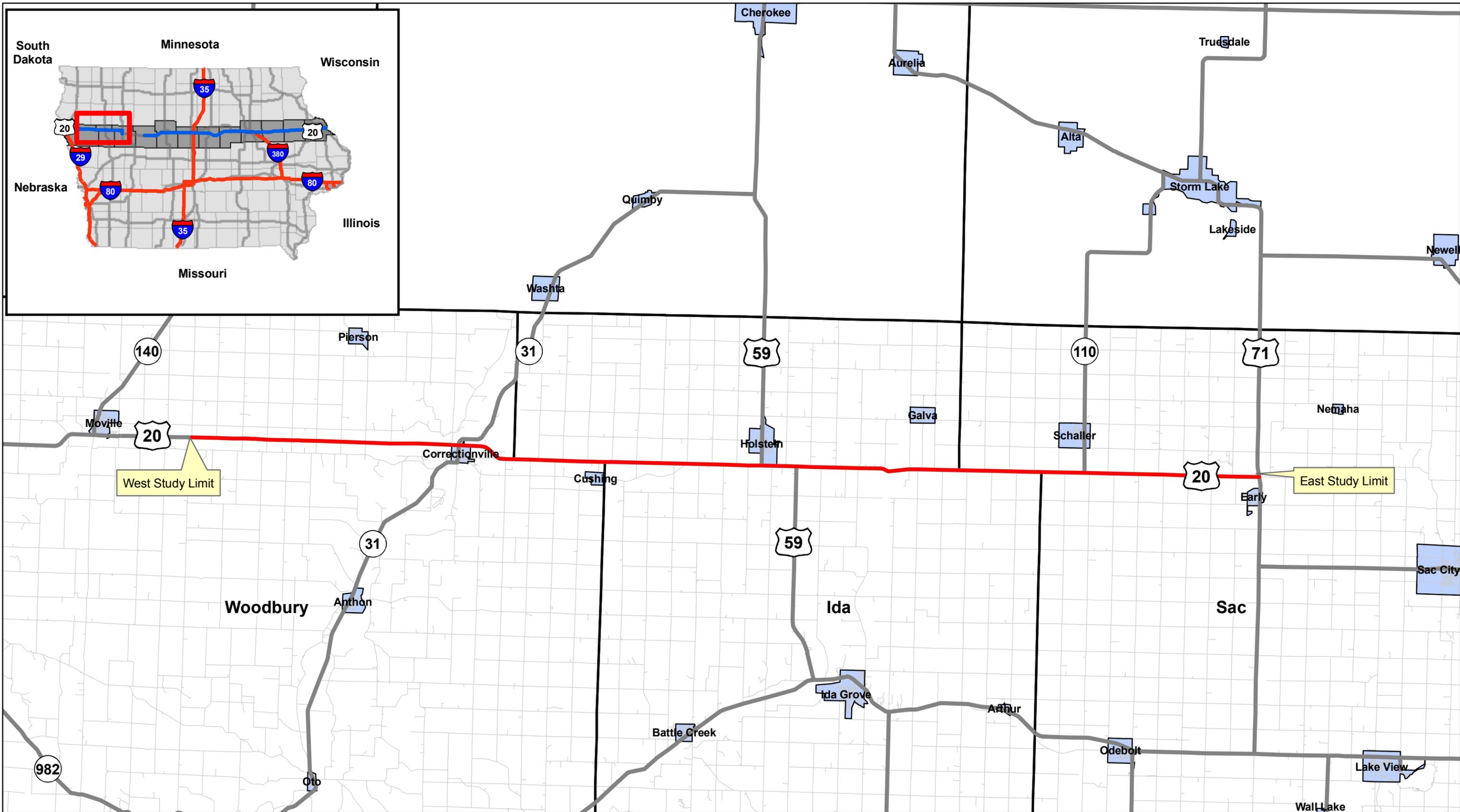
# Description of the Proposed Action

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The Iowa Department of Transportation (Iowa DOT) and the Federal Highway Administration (FHWA) are proposing to improve 44 miles of U.S. Highway 20 (U.S. 20) in Woodbury, Ida, and Sac counties, Iowa. The project study area is located in a rural part of western Iowa. The proposed project begins 3.5 miles east of Iowa 140 (IA 140) near Merville and extends east to the north junction of U.S. 20 and U.S. 71 near Early (Figure 1-1). The project study area extends 500 feet north and south of U.S. 20 for a total width of 1,000 feet.

The proposed improvements consist of widening the two-lane highway between Merville and Early to a four-lane divided highway with a vegetated median. Widening is proposed on either the north or south side, depending on the location. Existing U.S. 20 will be used as two lanes of the proposed four-lane divided highway, although some parts may be reconstructed because of poor pavement conditions and to meet current design standards.

In Correctionville, two options were considered: a bypass north of town, with an interchange at County Road L36; and widening U.S. 20 through town to a five-lane facility with two lanes in each direction, a center turn lane, curbs, and storm sewers. The through town option is preferred.



**CH2MHILL**



**Iowa Department of Transportation**

<p><b>PROJECT LOCATION AND STUDY LIMITS</b></p> <p>U.S. 20 ENVIRONMENTAL ASSESSMENT WOODBURY, IDA, AND SAC COUNTIES, IOWA</p>	DATE July 2008
	FIGURE 1-1

## SECTION 2

# Project History

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Since the 1960s, there have been plans in place to upgrade U.S. 20 to a four-lane highway across the state of Iowa. In November 1960, the Automotive Safety Foundation recommended to the Iowa Highway Study Committee that a freeway system be created in Iowa to provide a safe and efficient roadway network for motorists along the lines of the national interstate system. The Iowa State Highway Commission adopted the freeway system plan in 1965, including the planned construction of a freeway along the U.S. 20 corridor across the state.

Funding to upgrade U.S. 20 began in 1965. In implementing the plan, U.S. 20 has been constructed as a mix of freeway and expressway. Parts of the route have been upgraded to a four-lane highway, while other portions are under study for improvement to a four-lane highway, except for the segment addressed herein. Widening in all other segments is either completed, under construction, or in design or right-of-way acquisition.

In 1997, the Iowa legislature established the formation of a commercial and industrial network (CIN) in response to increased interest in providing a transportation network that supports the development of a more robust and diverse state economy. The legislation identifies the creation of safe, convenient, and efficient roadways as essential to providing continuity of access to regional, national, and international markets. The legislation requested that the Iowa State Highway Commission create a network of roadways across the state that best connects major urban/commercial areas, supports long-distance travel and high volumes of traffic, and is consistent with local planning efforts. The state legislature gave additional consideration to creating bypasses to promote efficient and effective travel, including roadways where local sources of funding could be obtained. The CIN was created from more than 2,000 miles of primary highways, including U.S. 20. Upgrading U.S. 20 between Merville and Early to a four-lane highway supports the objectives of the Iowa legislature.

# Purpose and Need

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## 3.1 Purpose of the Proposed Action

The project is located in a rural area of western Iowa along 44 miles of U.S. 20 in Woodbury, Ida, and Sac counties. The proposed project begins 3.5 miles east of Highway 140 near Merville and extends east to the north junction of U.S. 20 and U.S. 71 near Early. The purpose of the proposed action is to upgrade and modernize U.S. 20 between Merville and Early so that it may function adequately as an element of Iowa's CIN and support planned economic growth and development.

## 3.2 Need for the Proposed Action

The need for the proposed improvement is based on the following factors:

- Lane continuity
- Consistency with planned economic development
- Condition of the existing roadway

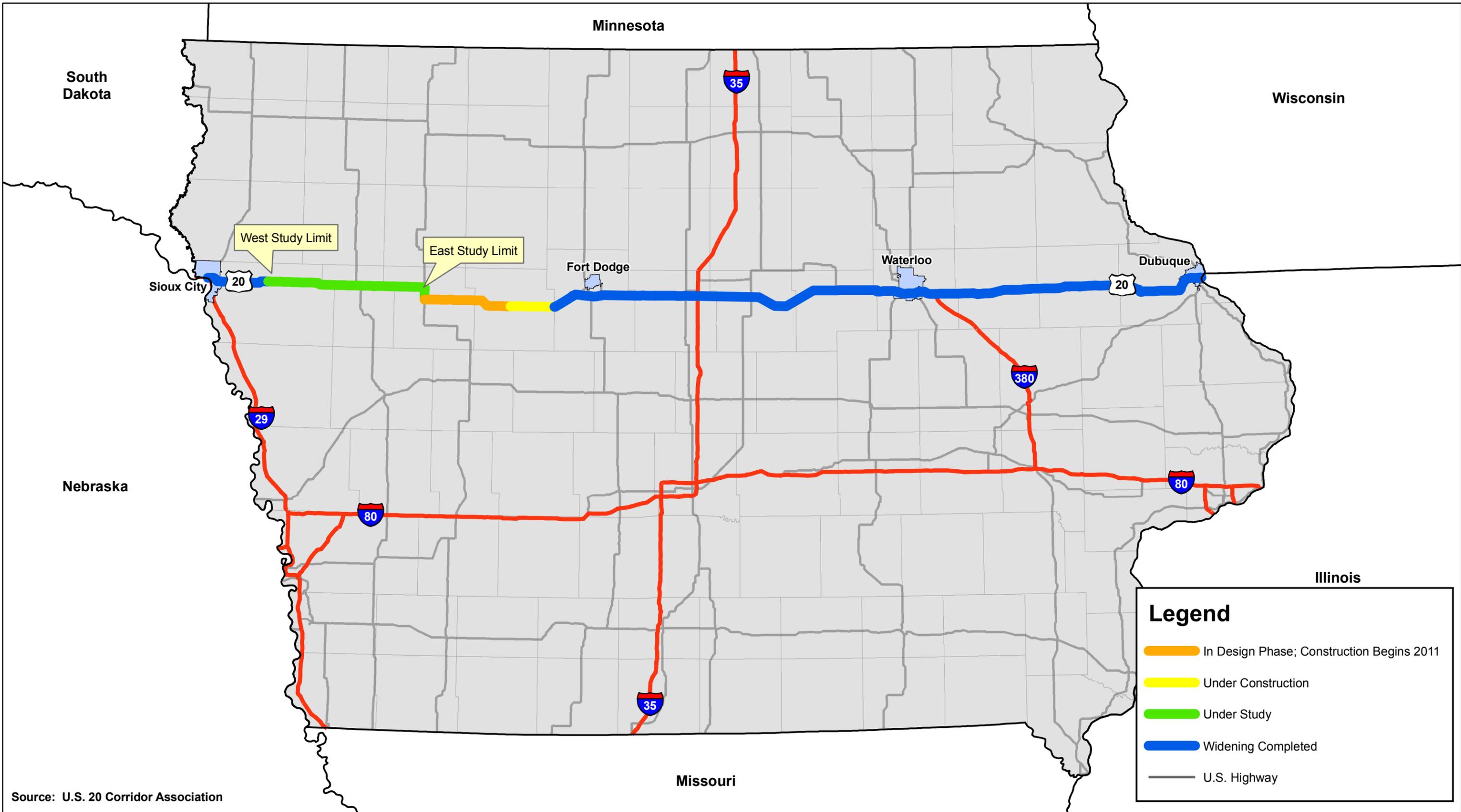
### 3.2.1 Lane Continuity

The Iowa DOT's Transportation Commission has identified U.S. 20 as part of the CIN and approved the development of U.S. 20 as a four-lane highway. As part of the CIN, parts of U.S. 20 across Iowa have already been upgraded to a four-lane highway. The project constitutes the last two-lane section of U.S. 20 in the state to be evaluated for widening to four lanes. Widening in all other segments is either completed, under construction, or in design or right-of-way acquisition (Figure 3-1).

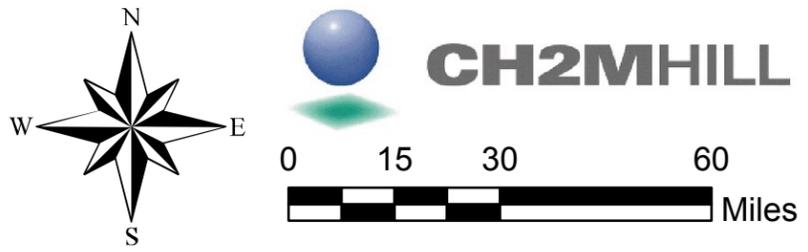
Upgrading and modernizing the roadway will create a continuous four-lane highway between Sioux City and Dubuque, as envisioned by the state legislature and the Transportation Commission in establishing the CIN and in designating U.S. 20 as an element of that network. Two significant functions of the CIN are to support local and regional planned development, and facilitate development and diversification of the state's economy by providing safe, efficient, and reliable roadway access to commercial facilities.

Improving U.S. 20 in Iowa provides lane continuity not only in Iowa, but also in Illinois. Illinois DOT plans to widen U.S. 20 from East Dubuque to Freeport, Illinois, a distance of about 60 miles. A U.S. 20 bypass at Freeport has been constructed, and a bypass of Galena is planned. A Record of Decision for the Galena-to-Freeport segment was approved in 2005. U.S. 20 is four lanes between Freeport and Rockford, where U.S. 20 connects with Interstate 90 (I-90).

In addition to its classification as part of the CIN, this particular segment of U.S. 20 is part of the National Highway System (NHS), as defined by the National Highway Designation Act of 1995. The NHS includes 161,000 miles of interstate highways and both rural and urban



Source: U.S. 20 Corridor Association



**U.S. 20 WIDENING STATUS**

U.S. 20 ENVIRONMENTAL ASSESSMENT  
 WOODBURY, IDA, AND SAC COUNTIES, IOWA

DATE	July 2008
FIGURE	3-1

principal arterial highways. Only 4 percent of the nation's highways are part of the NHS, but they carry 43 percent of all highway traffic and 69 percent of truck traffic. Ninety percent of the U.S. population lives within 5 miles of the NHS. Lack of a four-lane connection along U.S. 20 hinders travel and transport opportunities for the communities in the study area, thereby interfering with the ability of U.S. 20 to serve as a principal arterial and NHS route.

### 3.2.2 Consistency with Planned Economic Development / Land Use and Transportation Planning

Upgrading U.S. 20 to a four-lane facility has been planned for nearly 50 years. The following land use and transportation plans either identify U.S. 20 as an important link in transportation and economic development planning, or specifically recommend widening U.S. 20 to four lanes in the study area:

- Siouxland Interstate Metropolitan Planning Council (SIMPCO). 2006. *2030 Long Range Transportation Plan for the Siouxland Metropolitan Area*.
- SIMPCO. 1994. *Regional Planning Affiliation's Long Range Transportation Plan, Region IV*.
- *Sac County Comprehensive Land Use Plan* (January 2004; amended July 2007).
- *2005 Woodbury County General Development Plan*.

Important economic facilities are located near the project corridor. Ethanol and biodiesel production plants are located near Galva, adjacent to U.S. 20, and in Wall Lake, south of Early, in Sac County. A biodiesel plant is under construction in Galva, and an ethanol plant is under construction in Arthur, about 10 miles south of U.S. 20 in Ida County. A representative of the plant in Arthur estimated 150 trucks would enter and exit the plant each day, and some would likely use U.S. 20. Upgrading U.S. 20 would enhance the transportation facility to accommodate projected truck traffic. Further, it would improve the flow of commerce by better accommodating the delivery of raw materials to the plants and the transport of products from the plants to their markets. Improving roadways within the CIN, such as U.S. 20, is consistent with the CIN's core mission to support Iowa's economic vitality.

In the current competitive economy, agricultural and industrial products must move quickly and safely throughout the state, the country, and the world. Businesses and agricultural interests in the study area depend on an efficient highway system with connections to rail and barge facilities to meet their shipping needs. Sioux City, Iowa, provides rail transport connections to the Burlington Northern-Santa Fe, Union Pacific, and Illinois Central rail lines. The Big Soo Barge Terminal in Sioux City is the northernmost barge terminal on the Missouri River.

The transport of raw materials and finished products comprises a large part of the business costs borne by manufacturers and agricultural interests. Expanding U.S. 20 from two to four lanes would benefit agricultural interests and the commercial and industrial development in the study area by making transportation more reliable and decreasing transportation related costs through fewer stops, higher speeds, improved safety, and better vertical alignment (flatter grades, and thus lower fuel costs).

### 3.2.3 Condition of the Existing Roadway

The roadway generally has a rural cross section consisting of two 12-foot-wide travel lanes, one in each direction, and gravel shoulders. An open drainage system (vegetated ditches) is used along the route, as the adjacent land use is agricultural in most locations. Parts of the roadway were constructed as early as 1936. Iowa DOT resurfaced U.S. 20 several times with layers of asphalt pavement, some sections as recently as 1998. U.S. 20 was overlaid in 2007 just west of Correctionville, from the end of the four-lane section to Iowa Highway 31 (IA 31). The new pavement created a smooth riding surface but did not repair the cracks in the original pavement or voids in the gravel base under the pavement.

Iowa DOT's sufficiency ratings are a numerical index of the characteristics of a section of roadway. The basic sufficiency rating is determined based on structural adequacy (the ability of the road to withstand traffic and climate), safety (the ability of a road section to offer motorists a safe route), and service (the ability of the road to accommodate traffic volumes with minimal conflict). Structural adequacy is rated on a 25-point scale; safety on a 40-point scale; and service on a 35-point scale — making 100 the maximum possible basic sufficiency rating. A rating of 90 to 100 is considered excellent, 80 to 89 good, 70 to 79 fair, 50 to 69 tolerable, and 0 to 49 poor. Data from 2007 show that the sufficiency ratings for U.S. 20, within the project limits, vary from 50 to 81. Segments with high ratings, those in the 70s and low 80s, are the newer segments that pass through Correctionville and the four-lane section in Ida County at U.S. 59. Excluding the short, newer sections, the rating of the corridor as a whole is in the tolerable range.

The basic sufficiency ratings are adjusted for tolerability, volume-to-capacity ratio, and continuity. The purpose of the adjustments is to determine the roadway's sufficiency based on its road classification, geometrics, and the amount of traffic it would be expected to carry. The adjusted sufficiency ratings of this portion of U.S. 20 vary from 29 to 85. The same three segments cited above still perform the best, with scores of 84 or 85. However, using these ratings, several segments slip into the poor range, including the western project limit, the segment east of Correctionville to the four-lane section, and the segment from the Ida-Sac County line to Iowa 110 (Figure 3-2).

The terrain in the project corridor is rolling, which necessitates some no-passing zones because of restrictions on sight distance. The no-passing zones, combined with increasing traffic volumes and slow-climbing vehicles such as trucks, contribute to the need for an improved roadway.

## 3.3 Summary

Upgrading and modernizing U.S. 20 through the project area will complete a continuous four-lane roadway between Sioux City and Dubuque, as envisioned by the state legislature and the Transportation Commission. The upgrade will accommodate planned and future development in the area and allow the Iowa DOT to address condition and sufficiency issues in the corridor.



# Alternatives

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This section describes the alternatives developed to address the problems and needs identified in Section 3, *Purpose and Need*. It presents the range of alternatives considered, describes the rationale for eliminating some alternatives, identifies the Preferred Alternative, and discusses the rationale for identifying the Preferred Alternative. This section also summarizes the potential impacts of implementing each alternative analyzed in this Environmental Assessment (EA).

## 4.1 Alternatives Considered

The project team developed alternatives that were evaluated based on each alternative's ability to meet the project purpose and need. Three concepts were considered: the No-Action Alternative, a two-lane improvement, and a four-lane improvement. This section describes these improvement concepts in more detail.

### 4.1.1 No-Action Alternative

Under the No-Action Alternative, only maintenance and isolated safety-related repairs of the two-lane highway would be undertaken for the entire length of the corridor. The highway's geometric features and current capacity limitations would remain unchanged.

The No-Action Alternative was eliminated from further consideration because it does not meet the purpose of and need for the project. It would not provide lane continuity for U.S. 20 across Iowa. It would not complete the gaps in the highway network, nor would it be consistent with the CIN or with local or regional plans that support widening U.S. 20 in the project area. The No-Action Alternative would not improve the operational characteristics of the corridor; therefore, it would not enhance opportunities for economic development. Given the low sufficiency ratings of much of U.S. 20 in the project area, it is likely that substantial pavement repair, rehabilitation, or reconstruction would be required by the design year (2030). Thus, the No-Action Alternative would not address the need to improve the condition of the facility.

### 4.1.2 Two-Lane (Super-2) Improvement

The Super-2 concept consists of upgrading the existing facility to allow through traffic to travel at a higher speed without being interrupted by slower vehicles. Specific design features would include passing lanes approximately every 5 miles, deceleration and acceleration lanes, left-turn storage bays, wide driving lanes, and paved shoulders.

This alternative was dropped from further consideration because it would not adequately fulfill the purpose of and need for the project. Like the No-Action Alternative, the Super-2 alternative would not provide lane continuity and would not be consistent with the CIN or local and regional plans that support widening U.S. 20 in the project area.

### 4.1.3 Four-Lane Improvement

The four-lane improvement option requires construction of two new lanes adjacent to the two existing lanes. Where necessary because of poor pavement or subsurface conditions, the existing lanes would be reconstructed on their existing alignment. The typical roadway section would have two travel lanes in each direction separated by a vegetated median. The typical pavement width would be 24 feet, the typical median width 64 feet, from edge of pavement to edge of pavement, with gravel shoulders and a vegetated median area between the inner shoulders (Figure 4-1). Roadside ditches would be provided for drainage, as appropriate. The right-of-way width required for the proposed roadway would be approximately 250 feet, much of which Iowa DOT already owns (Section 5.2). Overall right-of-way needs would be slightly greater in hilly terrain, where larger roadway cuts or fills are required, and in low-lying areas, where sizable fills are required to raise the highway above flood level.

Access control would be Priority II or III with at-grade intersections in rural areas, and Priority I along the Correctionville bypass.<sup>1</sup> Direct access to the highway would be permitted for homes and farm operations, except near the potential Correctionville bypass interchange with County Road L36. The proposed posted speed limit is 65 miles per hour on rural, four-lane divided sections of the highway, and 35 miles per hour on urban sections.

The improved route generally would follow the existing alignment, with two new through lanes constructed either north or south of the existing lanes. The direction of widening depends largely on adjacent resources. Subsection 4.2.2, *Four-Lane Improvement*, discusses the widening alternatives.

This improvement scenario was retained for several reasons. A four-lane divided improvement is consistent with regional and statewide planning efforts and would help facilitate planned economic development in the study area. It would also provide lane continuity across Iowa, as this is the only segment of U.S. 20 that is not already widened to four lanes, under construction, or approved for widening. A consistent cross section of four lanes through the study area would minimize driver confusion and would provide continuity between the project termini. A four-lane improvement would improve the efficiency of the movement of goods throughout this region of Iowa and provide part of the infrastructure needed to attract industry to the area.

## 4.2 Alternatives Carried Forward

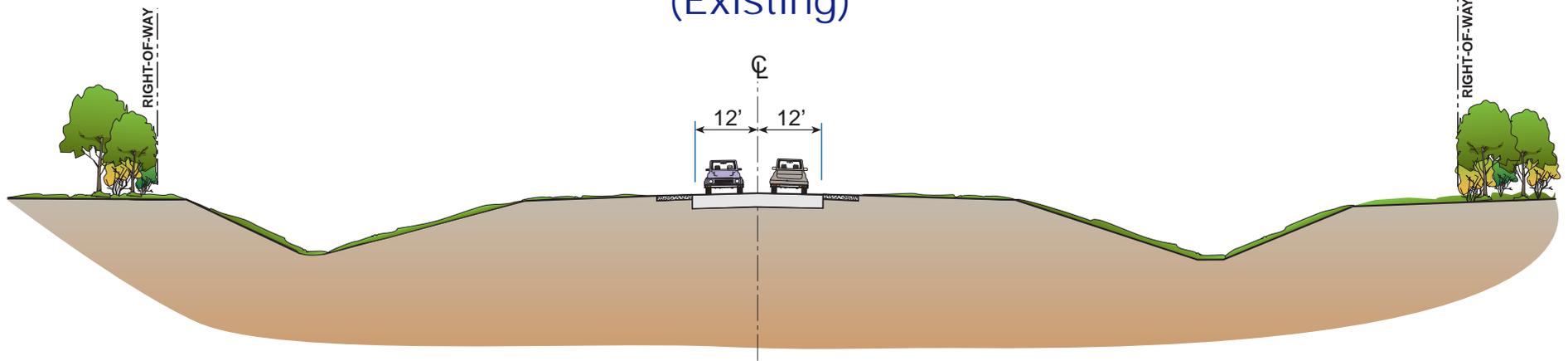
### 4.2.1 No-Action Alternative

Although the no-action alternatives would not meet the project purpose and need, it has been carried forward for evaluation in accordance with the requirement of the National Environmental Policy Act (NEPA), as amended, that the impacts of no action be considered as a baseline to which the Preferred Alternative is compared.

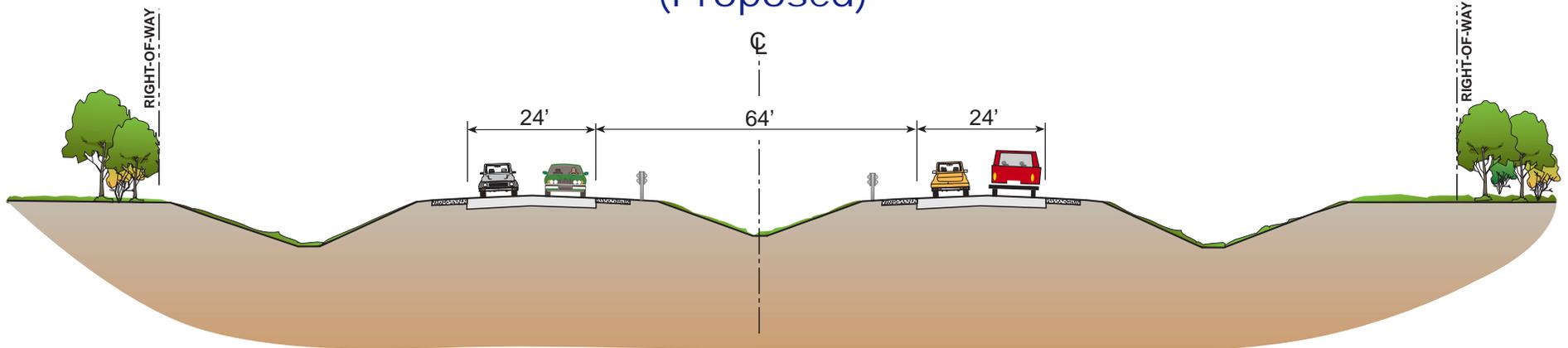
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<sup>1</sup> Priority I—Access to facility allowed only at interchange locations; Priority II—Access to facility allowed only at interchanges and selected at-grade locations; Priority III—Access to facility allowed at interchanges and at-grade locations.

U.S. 20  
(Existing)



U.S. 20  
(Proposed)



**Figure 4-1**  
Typical Proposed  
Cross Section

## 4.2.2 Four-Lane Improvement

U.S. 20 would be reconstructed from its two-lane configuration into a four-lane divided facility to serve both purpose and need. The improved route would follow the existing alignment, with two new through lanes constructed either north or south of the existing lanes, depending largely on adjacent resources. Engineering constraints and opportunities to avoid or minimize impacts to adjacent resources will be considered in determining the direction of widening.

Given the length of the corridor, and to help facilitate the discussion of the alternatives considered, this EA describes the corridor in four separate segments. The alternatives under consideration in each segment are discussed below. Figure 4-2 illustrates the segments and the alternatives considered for each.

### Segment 1

Segment 1 begins at the end of the existing four-lane section of U.S. 20 (3.5 miles east of Merville) and extends 11 miles east to Correctionville. The two alternatives under consideration in Segment 1 involve widening U.S. 20 either north or south of the roadway.

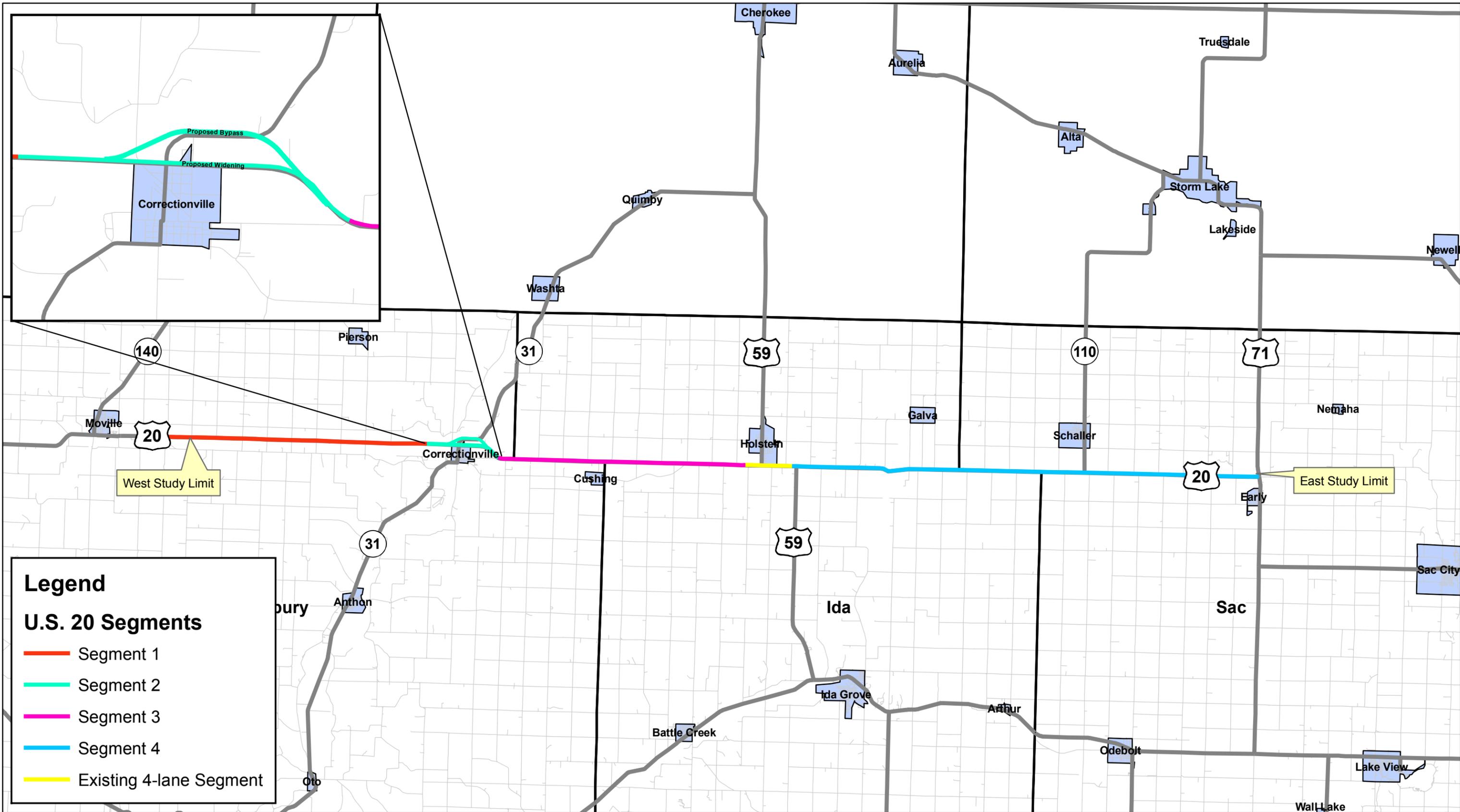
Alternative A would reconstruct the two lanes and add a median and two new lanes on the *south* side of U.S. 20, resulting in a four-lane divided highway. Alternative B would reconstruct the existing lanes and add a median and two new lanes to the *north* side of U.S. 20. These two alternatives are under consideration because of the presence of wetlands and stream crossings in the study area. Although Alternative B would result in one more potential displacement than Alternative A, it would have fewer wetland impacts and eliminate the need for relocation of an unnamed stream channel.

The project team also considered alternatives that could avoid or minimize impacts to a tributary of Three Mile Creek between Minnesota and Mason avenues. The team analyzed whether constructing a crossover could avoid impacts between the tributary channel south of U.S. 20 and associated wetlands north of U.S. 20. The crossover would entail transitioning U.S. 20 from the north side to the south side at approximately the same point that the channel meanders under U.S. 20. The team found that the crossover would complicate construction staging and create an undesirable road alignment with potential safety issues stemming from the presence of sharper curves.

Even with the crossover, impacts to the water resources in Segment 1 would not be completely avoided. On the south side, there would still be impacts to the tributary channel and to a small wetland because of the fill needed to build the roadway. On the north side, there would be impact to a small part of a wetland. Water resource impacts would occur beyond the immediate roadbed, because heavy equipment would have to operate beyond the edge of the proposed right-of-way. Therefore, the crossover alternative was dismissed.

### Segment 2

Segment 2 begins approximately 1 mile west of Correctionville near Sidney Avenue and extends 3 miles east through Correctionville to near Adams Avenue, east of town. The project team is considering two alternatives for U.S. 20 in Correctionville.



**Legend**

**U.S. 20 Segments**

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Existing 4-lane Segment



**CH2MHILL**

**Iowa Department of Transportation**

<p><b>U.S. 20 SEGMENTS</b></p> <p><i>U.S. 20 ENVIRONMENTAL ASSESSMENT WOODBURY, IDA, AND SAC COUNTIES, IOWA</i></p>	DATE	July 2008
	FIGURE	4-2

Alternative A would widen U.S. 20 through Correctionville from two lanes to five, with two lanes in each direction, a center turn lane, curbs, and storm sewers. Right-of-way acquisition in Correctionville might affect properties, but no homes or businesses would be displaced. Alternative A would not impact wetlands.

Alternative B would construct a new, four-lane, access-controlled highway, with an interchange on the west side of the community at County Road L36. The new bypass would be located 0.25 mile north of U.S. 20, approximately parallel to IA 31. The bypass would begin 775 feet west of the Little Sioux River crossing, west of Correctionville, extend north of Correctionville, and tie back into U.S. 20 just east of the 155th Street intersection. As part of this alternative, IA 31 would be relocated from where it enters Correctionville on the northeast side of town, to a new location directly south of the existing alignment, where it would connect with U.S. 20. Within Correctionville, U.S. 20 would be renamed IA 31. Alternative B would result in the displacement of 6 homes and two businesses and would impact 1.45 acres of wetlands.

Alternative A, the through-town option, would require acquisition of less right-of-way, result in fewer displacements of homes and businesses, and have fewer wetland impacts. Both alternatives would affect 4(f) resources. Specifically, Alternative A would affect a house that is eligible for the National Register of Historic Places and Alternative B, the north bypass, would affect the Walling River Access. For more detail on these resources, see Section 5, *Affected Environment and Environmental Consequences*.

A third alternative was considered but eliminated. Iowa DOT also evaluated a U.S. 20 bypass around the south side of Correctionville (Figure 4-2). A south bypass would be located about 1 mile south of existing U.S. 20. The bypass would be longer and would traverse more difficult terrain than a north bypass or widening existing U.S. 20 through Correctionville. It would be near four parks (Little Sioux River Greenbelt, Little Sioux Park, Shagbark Hills, and Copeland Park), a cemetery, and Bacon Creek on the east end. The south bypass would cross the Little Sioux River at a wider point than the north bypass option. To accommodate the new access point, an existing gravel road would need to be paved. A south bypass would also result in undesirable traffic operation because traffic would have to travel through Correctionville to access the bypass. For these reasons, the south bypass was eliminated from further consideration.

### Segment 3

Segment 3 begins approximately 1 mile east of Correctionville and extends east 10 miles to Holstein. At Holstein, existing U.S. 20 transitions to a four-lane cross section. Improvements to the 1.9-mile, four-lane segment are not expected as part of this project.

Alternative A would add a median and two new lanes to the south side of the existing two lanes, with some areas of complete four-lane construction to meet current design and safety standards. Potential impacts to environmental resources and potential residential displacements on the north side precluded the development of other alternatives. Iowa DOT owns some of the right-of-way required on the south side of the road through Segment 3, and using that would result in eight displacements. Widening to the North would result in up to 12 displacements.

## Segment 4

Segment 4 begins at the eastern end of the four-lane highway segment near Holstein and extends east 19 miles to connect with a proposed U.S. 20, four-lane project located 1.5 miles west of the north junction of U.S. 71.

Alternative A would add a median and two new lanes to the north side of U.S. 20 with some areas of complete four-lane construction to meet current design and safety standards. No other alternatives were developed. Review of both the design and environmental features indicated that widening to the north would minimize or avoid impacts to the natural environment. The northern alignment avoids a wetland impact, and results in far fewer displacements (5) than a southern widening (11).

## 4.3 Preferred Alternative

Segment 1, Alternative B, would reconstruct two lanes and add a median and two new lanes to the north side of U.S. 20.

Segment 2, U.S. 20 through Correctionville, would be widened from two to five lanes, with having two lanes in each direction, a center turn lane, curbs, and storm sewers.

Segment 3, a median and two new lanes, would be added to the south side of the existing two lanes, with some areas of complete four-lane construction, to meet current design and safety standards.

Segment 4, a median and two new lanes would be added to the north side of U.S. 20, with some areas of complete four-lane construction, to meet current design and safety standards.

## 4.4 Summary of Impacts

Table 4-1 summarizes the calculated impacts on environmental resources that would be caused by the Preferred Alternative to improve U.S. 20. For more details, refer to Section 5, *Affected Environment and Environmental Consequences*.

TABLE 4-1  
Preferred Alternative—Summary of Potential Impacts

Resource	Potential Impact
Total right-of-way (acres)	1,775.4
Existing right-of-way (acres) <sup>a</sup>	860.8
New Right-of-way acquisition (acres)	914.6
Displacements (residences/businesses)	14/1
Farmland conversion (acres)	869.5
Wetlands (acres)	8.3
Waterways (feet)	16,522
Floodplain	1 (transverse) 11.3 acres

TABLE 4-1  
Preferred Alternative—Summary of Potential Impacts

Resource	Potential Impact
Architectural/historic resources (sites) eligible for listing on the National Register of Historic Places (NRHP)	1
Archaeological resources (sites) eligible for listing on the NRHP	1
Potential Section 4(f) resources (sites)	1 (de minimis)
Noise receivers (exceeding NAC of 66dBA)	1
Regulated materials (sites)	67

<sup>a</sup>This includes land owned by Iowa DOT but historically has been used for something other than transportation (e.g. farmland, open space).

## SECTION 5

# Affected Environment and Environmental Consequences

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Section 5 describes the existing social, economic, and environmental setting of the project area and potential impacts associated with the alternatives described in Section 4. This document was developed using a streamlined process; therefore, resources that would not be affected by the project are not discussed in detail in this report. Figures 5-1 through 5-4 illustrate the general environmental constraints in the project corridor. Each resource is discussed in four sections. The first summarizes the existing conditions; the second, impacts (if any) to the resource under the no-action scenario; the third, impacts to the resource associated with proposed improvements to U.S. 20; and the fourth, avoidance, minimization, and mitigation measures.

## 5.1 Socioeconomic Impacts

### 5.1.1 Land Use

#### Existing Conditions

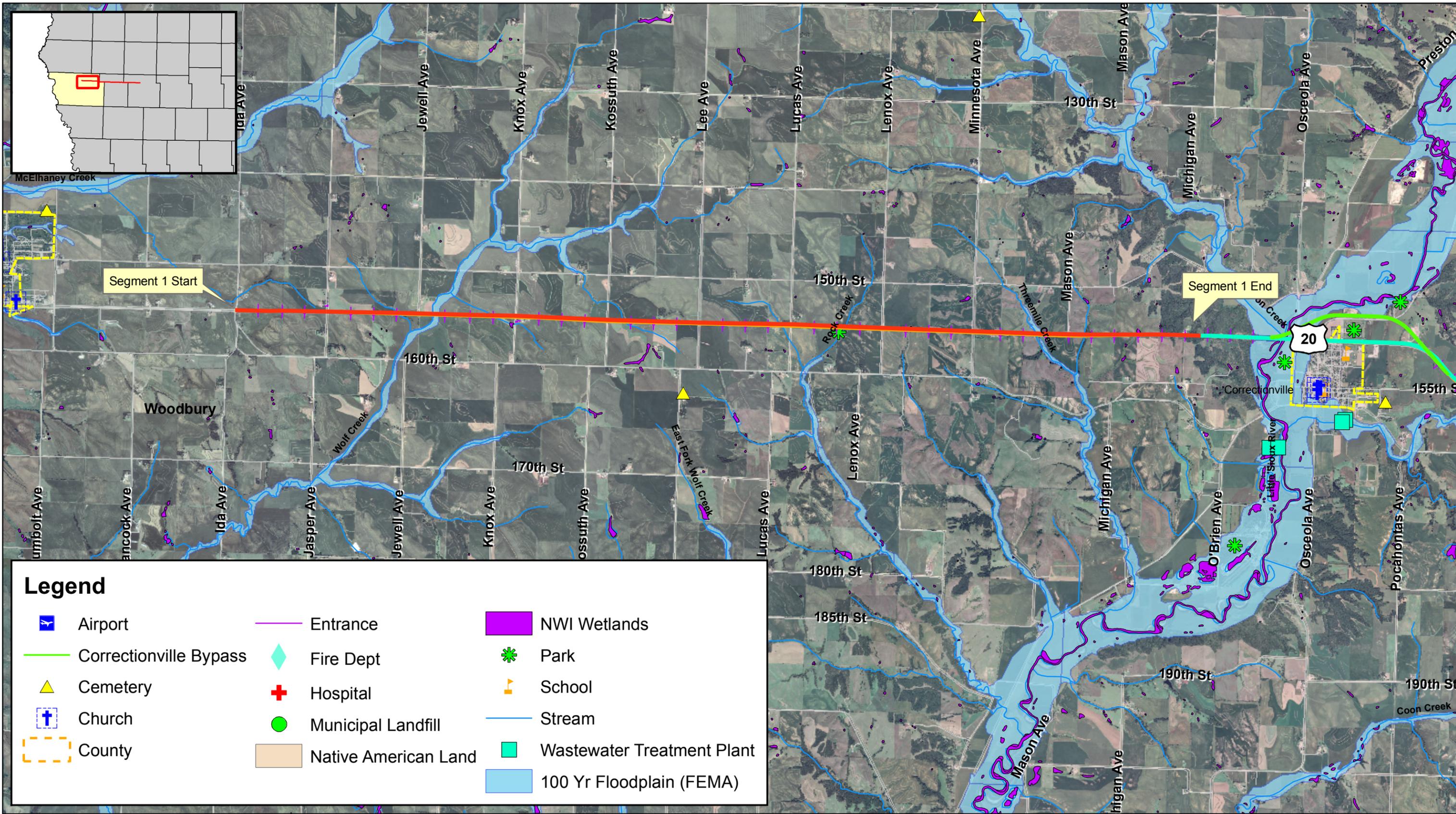
Evaluation of land use as it relates to transportation projects refers to the determination of direct and indirect effects on the land uses within the corridor. The U.S. 20 study corridor is primarily rural land used for agriculture. Residential areas and some commercial/industrial areas are scattered through the corridor, mainly where U.S. 20 passes through or near the cities of Correctionville, Cushing, Holstein, Galva, Schaller, and Early.

#### No-Action Alternative

The No-Action Alternative represents the base conditions for the U.S. 20 corridor. It includes continued use of the U.S. 20 corridor and would not affect overall land use.

#### Build Alternative

Given the rural nature of the U.S. 20 corridor, land use in the area will remain largely unchanged. Because the proposed improvements maintain the general alignment and access opportunities of the route, the Build Alternative will not change land use patterns that have developed along the route. Although the Build Alternative would acquire 914.6 acres of new right-of-way from mostly agricultural land use and convert it to a transportation use, the impacts tend to be at the edges of farmed property and constitute a very small percentage of the total farmed land in the area. The project will affect individual properties, but not the overall land use of the larger surrounding area. Additionally, the improvement is reflected in the region's long-range plans, including the *2030 Long Range Transportation Plan for the Siouxland Metropolitan Area*, *Regional Planning Affiliation's Long Range Transportation Plan*, *Sac County Comprehensive Land Use Plan*, and the *2005 Woodbury County General Development Plan*, as referenced in Section 3.2.2.



### Legend

Airport	Entrance	NWI Wetlands
Correctionville Bypass	Fire Dept	Park
Cemetery	Hospital	School
Church	Municipal Landfill	Stream
County	Native American Land	Wastewater Treatment Plant
		100 Yr Floodplain (FEMA)

CH2MHILL

0 0.5 1 2 Miles



## SEGMENT 1 CONSTRAINTS

U.S. 20 ENVIRONMENTAL ASSESSMENT  
WOODBURY, IDA, AND SAC COUNTIES, IOWA

DATE	July 2008
FIGURE	5-1

### Avoidance, Minimization, and Mitigation

The Build Alternative is consistent with future land use plans in the study area. Therefore, no additional mitigation of this resource is anticipated.

### 5.1.2 Right-of-Way and Relocation Potential

#### Existing Conditions

The Iowa DOT owns 860.8 acres of right-of-way within the study area surrounding the existing U.S. 20 corridor.

#### No-Action Alternative

The No-Action Alternative would not require acquisition of any additional right-of-way or displacement of any residences or businesses.

#### Build Alternative

The Build Alternative would require acquisition of 914.6 acres of land for new right-of-way. It would also require acquisition of 13 residences and one business (Table 5-1).

TABLE 5-1  
Future Right-of-Way

Segment	New Right-of-Way (acres)	Existing Right-of-Way (acres)	Displacements
1	243.7	231.0	1 business
2	46.6	71.2	0
3	219.3	226.3	8 residences
4	405.0	332.3	5 residences
<b>Total</b>	<b>914.6</b>	<b>860.8</b>	<b>14</b>

#### Avoidance, Minimization, and Mitigation

Preliminary design of the Build Alternative maximized use of existing right-of-way to either avoid or minimize impacts to private property to the greatest extent possible. As design progresses, additional effort will be made to either avoid or minimize acquisition of property and relocation of residences and businesses. Any acquisition required will follow the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act) (42 USC 4601 et seq.) and the Iowa relocation assistance law (Iowa Code, Chapter 316).

### 5.1.3 Construction Impacts and Traffic Maintenance

Air quality could be affected by motor vehicle and machinery emissions during construction and by particulate emissions resulting from earthwork and other construction activities. Construction vehicle activity and the disruption of normal traffic flows may result in increased motor vehicle emissions in certain areas. Construction activity would be monitored to ensure that work proceeds in conformance with local and state air quality regulations.

The noise generated by construction equipment, such as dump trucks, graders, bulldozers, and pavement construction equipment, varies greatly depending on equipment type, model, make, duration of operation, and specific type of work being performed. Noise levels would increase during construction of the Build Alternative.

Because the new lanes will be constructed either immediately north or south of the two existing lanes, two travel lanes will remain open and traffic flow will be maintained during construction.

## 5.2 Cultural Impacts

### 5.2.1 Historic Sites

As a result of the architectural resource survey, 173 previously unrecorded properties were identified and evaluated with respect to the NRHP criteria. Seventy-three were recorded as farmsteads dating from the turn of the 20th-century to the mid-20th century.

Three houses near the project are eligible for listing on the NHRP. The Van Houten house in Correctionville (97-04327) and a house at 407 10th Street in Correctionville (97-04313) are eligible under Criterion C, and a Queen Anne style house also on 10th Street in Correctionville (97-04315) is eligible under Criterion A.

Additional surveys were conducted on the Everett and Doris Still Farmstead, but it was determined not eligible because of alterations, and the State Historic Preservation Office (SHPO) concurred.

#### No-Action Alternative

The No-Action Alternative would not affect any historic sites.

#### Build Alternative

Of the potential historic properties, only the Van Houten House would be affected by the Build Alternative. The SHPO has determined that there is no adverse effect to the Van Houten House Property (see Appendix B). The structure will not be affected by the widening, and the house, which is 40 to 50 feet from the edge of pavement, will maintain a 20-to-25-foot buffer with implementation of the Build Alternative.

#### Avoidance, Minimization, and Mitigation

Effort has been made to minimize the impact of the 20-foot property acquisition in front of the Van Houten House. No additional mitigation is required.

### 5.2.2 Archaeological Sites

#### Existing Conditions

Louis Berger Group, Inc., performed a Phase 1 cultural resources investigation of the U.S. 20 study corridor in Woodbury, Ida, and Sac counties between October 1999 and December 2006. The archaeological investigation was conducted using an extensive archival and records search. A pedestrian survey was conducted, as were shovel and geomorphologic testing. During the investigation, 70 previously unrecorded archaeological sites were identified. Of those, 14 were identified but only 6 might be affected by the project and thus potentially eligible for the NRHP. Phase II studies were conducted at the following sites:

- 13IA31 – a historic farmstead occupied from the early 20th to the mid-20th century
- 13WD109 – a historic farmstead occupied from 1902 until 1969

- 13WD130—a small Woodland period open habitation site
- 13WD132—a Woodland period and undetermined prehistoric stratified campsite
- 13WD135—a Woodland period open habitation site
- 13WD136—a Woodland period open habitation site that appears to be a large prehistoric campsite

In March 2008, the Berger Group completed a Phase II evaluation of all six sites. Historic sites 13IA31 and 13WD109 and prehistoric sites 13WD132, 13WD135, and 13WD136 were determined ineligible for listing in the NRHP. Prehistoric site 13WD130 is eligible for listing in the NRHP under Criterion D. If avoidance is not possible, data recovery investigations should be conducted prior to road construction.

Supplemental Phase I investigations were also conducted at land parcels where access previously had been denied by the landowners. Of the 14 properties investigated, only one was within the bounds of the proposed right-of-way. The Everett and Doris Still Farmstead, discussed in the historic sites section, was determined to be ineligible for listing on the NRHP based on alterations that had been made to the structures.

### **No-Action Alternative**

The No-Action Alternative would not result in any impacts to archaeological sites.

### **Build Alternative**

The Build Alternative will affect one archaeological resource. Prehistoric site 13WD130, a seasonal Late Woodland period base camp associated with Loseke Ware ceramics indicating probable occupation from 1250 to 1100 BP, is eligible for listing in the NR HP under Criterion D for its potential to contribute important new information about the Late Woodland Loseke Creek Variant in the Little Sioux River Valley and the broader region. If avoidance is not possible, data recovery investigations would be conducted before road construction.

The SHPO concurred that the determination for all other parcels was No Historic Properties Affected.

### **Avoidance, Minimization, and Mitigation**

No avoidance, minimization, or mitigation measures are required.

## **5.2.3 Section 4(f) Resources**

Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended, provides that the Secretary of Transportation “shall not approve any program or project that requires the use of any publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance or land of an historic site of national, state, or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such programs or project includes all possible planning to minimize harm resulting from the use.” The term “Section 4(f)” is replaced by the term “Section 303” in the 2008 Safe Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU). However, in keeping with current guidance from FHWA and the U.S. Department of Transportation, this EA report retains the term Section 4(f).

FHWA and Iowa DOT have developed a Section 4(f) decisionmaking process to determine the eligibility of properties or sites for protection under Section 4(f) and to evaluate them relative to the alternatives being considered. The Section 4(f) decision process involves five steps:

1. Is it 4(f)?
2. Is there a use of the 4(f) property?
3. Can the 4(f) property be avoided?
4. Can the impacts to the 4(f) property be minimized?
5. What documentation is needed?

### Existing Conditions

There are three parks/recreation areas and one historic property identified near the U.S. 20 corridor. The parks/recreation areas are the Correctionville Golf Course, Sioux Bend Wildlife Management Area, and the Walling River Access, and all are located near Correctionville. FHWA determined that all of these properties, except the Correctionville Golf Course, are Section 4(f) resources (see Appendix C).

The Correctionville Golf Course is located north of Correctionville on the north side of U.S. 20. It is a privately owned 9-hole golf course that is open to the public for a fee. FHWA determined that this property does not qualify as a 4(f) resource (see correspondence in Appendix C).

The Sioux Bend Wildlife Management Area lies west of Correctionville city limits on the south side of U.S. 20. The wildlife area is owned by the State of Iowa and maintained by the DNR. The property is open land used recreationally for bird watching and hunting. The property is open to the public year round for no fee.

Walling River Access is located north of Correctionville, and to the north of U.S. 20 along Highway 31. The Walling River Access is owned by the Woodbury County Conservation Board and is open space used for general recreation. Its primary function is providing access to the Little Sioux River for boating and fishing.

The Van Houten House is located on the north side of U.S. 20 in Correctionville and is eligible for listing on the NRHP.

### No-Action Alternative

The No-Action Alternative would affect 4(f) resources in the study area.

### Build Alternative

The Build Alternative would affect one of the Section 4(f) properties (Table 5-2). Section 4(f) impacts as a result of the U.S. 20 Build Alternative include a 15-20-foot-strip acquisition from the property fronting the Van Houten House. The new right-of-way would be 20 to 25 feet from the structure. Temporary easements would be required during construction beyond the new right-of-way to construct the proposed improvements. Coordination with the SHPO has found that there is no adverse effect to the Van Houten House (see letter dated March 17, 2008, in Appendix B). FHWA has determined this to be a de minimis 4(f) impact to the property (see Appendix C).

TABLE 5-2  
4(f) Resource Impacts

Description	Nature of Impact	Total Affect	4(f) Resource?
Walling River Access	Not affected	None	Y
Sioux Bend Wildlife Management Area	Not affected	None	Y
Van Houten House	de minimis	15-20 feet of frontage	Y

### Avoidance, Minimization, and Mitigation

The project design avoids and minimizes impacts to Section 4(f) land to the extent possible.

## 5.3 Natural Environmental Impacts

### 5.3.1 Wetlands

The U.S. Army Corps of Engineers (USACE) regulates waters of the U.S., including wetlands and waterways, under Section 404 of the Clean Water Act (33 USC 1251 et seq.). Wetlands are “areas that are inundated or saturated by surface or groundwater at frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328).

A Section 404 permit from USACE is required to authorize the discharge of dredged or fill material into waters of the U.S. In addition, the Iowa Department of Natural Resources (DNR) has regulatory jurisdiction over all waters within the state boundary. See Table 6-1 for a discussion of permits and approvals (including those for wetlands and waters of the U.S.) required for the project.

Executive Order (EO) 11990, Protection of Wetlands, requires federal agencies (including FHWA) to implement “no net loss” measures for wetlands (42 *Federal Register* [FR] 26961). Those measures are implemented in a phased approach:

1. Avoidance—Impacts to wetlands are avoided through alignment design.
2. Minimization—If wetland impacts cannot be fully avoided, impacts are minimized to the maximum extent practicable.
3. Mitigation—Unavoidable impacts to wetlands may be mitigated through onsite or offsite wetland creation, restoration, or enhancement. (Mitigation requirements are regulated by USACE as part of the Section 404 permit process.)

### Existing Conditions

Wetland and stream delineations were conducted to locate wetlands and other waters of the U.S. within the project study corridor. Potential wetland and stream resource areas were identified using numerous years of aerial photography and geographic information system (GIS) data. Data included in the GIS system consisted of U.S. Geological Survey topographic maps, the U.S. Department of Agriculture (USDA) Soil Survey Geographic Database for locating hydric soils (SSURGO), and the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps.

After identifying potential wetland resources using aerial photography and GIS, field surveys were initiated and wetland and stream delineations were conducted. The observation and documentation of wetland characteristics was performed on a site-specific basis using the guidance of the 1987 *Wetlands Delineation Manual*, as well as knowledge of natural resources and ecology. Wetlands were identified, characterized, and classified by type for the entire study corridor. Potential wetland locations were marked on aerial photographs (in which 1 inch on the map corresponds to 300 actual feet) and were digitized. Wetland classification and nomenclature follows that of Cowardin, et al. (1979).

Wetlands within the study corridor were identified from background information and field reconnaissance during the fall of 2007. Background information collected included SSURGO hydric soil data, NWI maps, and aerial photography of various years. A site visit was conducted on November 20, 2007, to field verify the location, relative size, and type of wetland including dominant vegetation within the study corridor.

Wetlands identified within the study corridor were generally adjacent to the existing alignment and associated with water draining to and from culverts. Palustrine emergent wetlands within the study corridor were defined by plant communities dominated by reed canary grass (*Phalaris arundinacea*), *Equisetum* sp., bulrush (*Scirpus* sp.), cattail (*Typha* sp.) and various sedges (*Carex* sp.). Palustrine forested wetlands within the study corridor were generally defined by the presence of willow (*Salix* sp.) and ash (*Fraxinus* sp.). Palustrine unconsolidated bottom wetland resources including farm ponds and impoundments were identified within the project study corridor.

### No-Action Alternative

The No-Action Alternative would not affect wetlands or stream resources.

### Build Alternatives

The Build Alternative would affect 8.3 acres of wetlands within the study corridor. Table 5-3 lists the acreages potentially affected within each segment. As the design is refined, avoidance and minimization measures may be implemented, and the actual area of disturbance will be identified. The delineated wetland boundaries will be included in a Section 404 permit application filed with USACE.

TABLE 5-3  
Potential Impacts to Wetlands

Wetland Resources	Inventory of Resources within each Build Options (acres)			
	Segment 1	Segment 2	Segment 3	Segment 4
Palustrine Emergent	0.5	—	4.1	1.6
Palustrine Forested	1.70	—	0.3	—
Palustrine Unconsolidated Bottom	—	—	0.1	—
<b>Total Wetland Resources (acres)</b>	<b>2.2</b>	<b>—</b>	<b>4.5</b>	<b>1.6</b>

### Avoidance, Minimization, and Mitigation

Wetland impacts will be avoided to the extent practicable. If impacts are unavoidable, they will be minimized to the extent practicable. Minimization may include modifications that

will result in less impact to wetland resources while allowing the project purpose and need to be met. If further mitigation measures are required, compensatory mitigation will be used for those wetland resources that cannot be avoided or minimized. Attempts will be made to locate compensatory mitigation sites within or adjacent to the project corridor. If none is available or appropriate, offsite compensatory mitigation opportunities may be used.

### 5.3.2 Surface Waters and Water Quality

#### Existing Conditions

The U.S. 20 study corridor crosses the following HUC8 (eight-digit numbered hydrologic units) watersheds as classified by the U.S. Geological Survey (USGS): Monona-Harrison Ditch (no. 10230004), Little Sioux (no. 10230003), Maple (no. 10230005) and Boyer (no. 10230007). According to USACE policy, a stream resource is subject to the requirements of Section 404 of the Clean Water Act if it has a definable bed and bank, and so streams were identified using that criterion. Stream resources in the U.S. 20 study corridor include rivers, streams, and intermittent drainages. All the streams eventually flow into the Missouri River (the nearest Traditional Navigable Water).

In the project corridor, U.S. 20 crosses three rivers by bridge. It crosses the Little Sioux River, the largest drainage in the corridor, just west of Correctionville. Just south of the U.S. 20 bridge, the channel is 100 feet wide and the water several feet deep. The area includes a large, upland woodland and an extensive riparian zone along the river north and south of U.S. 20.

U.S. 20 crosses the Maple River about 5 miles east of Holstein. The river is completely channelized in the study corridor. The channel is 40 to 50 feet wide with no natural vegetation along its banks. U.S. 20 crosses the Boyer River about 2 miles west of Early; it, too, is channelized within the study corridor. The channel is 30 to 40 feet wide. The river banks at the crossing have some native trees, and parts of the bank are armored with riprap and grass.

The U.S. 20 study corridor crosses four USGS-named creeks: Wolf, Rock, Threemile, and Pierson. The creeks all appear as perennial stream resources (solid blue-line) on USGS topographic maps.

The U.S. 20 study corridor crosses 33 unnamed tributaries to the above-described rivers and creeks, and also McElhaney, Battle, and Bacon creeks. These tributaries are predominantly mapped as intermittent drainages (dashed blue-line) on USGS topographic maps.

There is a total of 54,526 feet of stream resources in the study area. Water quality data are unavailable for the streams, but general observations indicate that they are representative of most rural streams.

#### No-Action Alternative

The No-Action Alternative would not affect water quality.

#### Build Alternative

The Build Alternative would require new bridges over the Little Sioux, Maple, and Boyer rivers. Secondary resources most likely would be crossed using reinforced concrete box

culverts and reinforced concrete pipe culverts. Culverts would be sized for expected flow capacity and placed such that streams would remain fish passable.

Total stream resource is 6,921 feet within Segment 1, 350 feet within Segment 2, 5,955 feet within Segment 3, and 3,296 feet within segment 4, for a total of 16,522 feet.

The level of impact of the Build Alternative on stream resources will be minimal, since the roadway would be built along the existing highway corridor. Efforts to avoid and minimize impacts to stream resources are concurrent with each step of the design phase. Where efforts to avoid and minimize impacts to stream resources are not practicable, in-kind compensatory stream mitigation would be initiated.

### **Avoidance, Minimization, and Mitigation**

During construction, proper erosion control measures will be employed to minimize erosion and sedimentation. These measures are conditions of the Section 404 permit, and are prescribed in design and construction guidance provided by the Iowa DOT. They should be coordinated with the local Soil and Water Conservation District (SWCD). Erosion control devices will be installed before commencing construction that could cause erosion.

Temporary or permanent erosion control measures to be used include silt fencing, sediment basins, detention basins, interceptor ditches, seeding and sodding, riprap on exposed banks, erosion mats, and mulching. Disturbance of stream vegetation will be kept to a minimum. Construction activities near sensitive streams will be conducted during low- or normal-flow periods, if necessary.

The potential for erosion increases during construction. The proposed alternative must comply with the National Pollutant Discharge Elimination System (NPDES) criteria. (Refer to Section 6, Table 6-1, Permits and Approvals.) The criteria require that a permit be obtained when more than 1 acre of land would be disturbed. Part of the permit process is the completion of a pollution prevention plan that outlines measures that will minimize site erosion and pollutant movement to receiving waters during construction. Best management practices (BMPs) will be used while performing in-stream work to minimize stream impacts. BMPs to be used include proper installation and maintenance of silt fences, temporary mulching, seeding and rapid revegetation of stream banks, riprap placement, sediment traps at intakes, sediment basins, and streamflow velocity controls. Long-term measures include site reviews to check for eroded areas and to maintain the BMPs.

No significant impacts to wetlands and stream resources are expected to occur based on compliance with permitting processes (see Section 6, Table 6-1, for details).

### **5.3.3 Floodplains**

Floodplains provide floodwater and stormwater attenuation by decreasing water velocities and providing temporary water storage. By temporarily storing water, floodplains allow sediments to settle, and provide erosion control. They also provide important ecosystem functions such as nutrient export, increased primary productivity, and wildlife habitat and movement corridors. The extent to which these functions are expressed varies depending on vegetative structure, stream hydrology, and distance from the stream.

The following definitions from the Federal Emergency Management Agency (FEMA) are used in this section:

- *Floodplain* is the land adjacent to a body of water, with ground surface elevations at or below the one percent annual chance or 100-year flood elevation.
- *Floodway* is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

EO 11988, Floodplain Management (42 FR 26951), requires that federal agencies identify potential floodplain encroachment of projects they fund and that they assess the impact of encroachment on human health, safety, and welfare, and on the natural and beneficial values of the floodplain. For purpose of the EO, “floodplain” is synonymous with “100-year floodplain.”

### Existing Conditions

Floodplains are associated with certain surface water conveyance channels and influenced by the surrounding topography and drainage basins. This analysis focuses on 100-year floodplains (the area expected to flood at least once every 100 years) mapped by FEMA. The only 100-year floodplain within the study area is associated with the Little Sioux River in Segment 2. Planning for construction in floodplains must comply with EO 11988. Various permits and clearances would be required for construction within a floodplain. “No rise” certification is not required for this project as it does not occur within a designated floodway. A state or local floodplain permit would be required for various types of floodplain development. Based on the location of the floodplain, these permits would be obtained from Iowa DNR and Woodbury, Ida, and Sac counties.

### No-Action Alternative

The No-Action Alternative would not affect floodplains.

### Build Alternative

The Build Alternative will affect 11.3 acres of the 100-year floodplain of the Little Sioux River. Given the extent of the floodplain, and the location of existing U.S. 20, there is no practicable alternative to construction in floodplains.

### Avoidance, Minimization, and Mitigation

As design of the structure across the Little Sioux River progresses, attempts to minimize the floodplain impacts will be investigated by reducing the number of piers in the floodplain. Before the project is constructed, a permit would be required for regulated activities involving excavating or filling, including roadway or bridge construction, in a floodplain. A precise determination regarding the extent of regulated work will be available during the final design stage of development. It is expected that project completion would involve the aforementioned routine activities, as well as those associated with a 401 Water Quality and state floodplain construction permits. Accordingly, appropriate materials will be prepared and forwarded to USACE and the Iowa DNR for processing and approval.

Executive Order 11988, Floodplain Management (42 FR 26951), and 23 CFR 650 Subpart A direct federal agencies to take action to reduce the risk of flood loss; to minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. The Order also requires agencies to elevate structures above the base flood level whenever possible. The object of the Order is to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

### Only Practicable Alternative Finding for Floodplains

Presidential Order 11988 and 23 CFR 650 require that federal agencies avoid, to the extent practicable, impacts to natural floodplain values and incompatible floodplain development. The following information sets forth the basis for a finding of no practicable alternative to floodplain encroachment associated with the Build Alternative in Segment 2, and to demonstrate the proposed improvements would include all practicable measures to minimize harm to the natural floodplain values.

The Build Alternative requires construction within the Little Sioux River floodplain. Given the current alignment of the route through the Little Sioux River floodplain and the proposed improvements, the floodplain crossing is unavoidable if the project is to serve as desired.

### 5.3.4 Threatened and Endangered Species

Threatened and endangered species are protected under the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.). The Endangered Species Act provides for the protection of animal and plant species that have been determined to be in population decline and that are in jeopardy of becoming extinct. USFWS has the authority of the federal government to administer the protection of such species.

#### Existing Conditions

Both the Iowa DNR and the USFWS were contacted through early coordination letters to identify threatened and endangered species that may occur in the project area. The Iowa DNR Natural Areas Inventory database was also consulted to find a complete list of threatened and endangered species occurrences for the three counties crossed by the U.S. 20 project. Table 5-4 lists the species, the county of known occurrence, and their status.

Initial biological field surveys were conducted in June 2007 to identify suitable habitat for the aforementioned species. The vast majority of the land along both sides of existing U.S. 20 has been converted to agriculture and is intensively farmed. The few exceptions consist of upland woodlands and wooded riparian areas along perennial streams and rivers and intermittent drainages. The initial field surveys determined that there was not suitable habitat present for the mammal, reptile, bird, and insect species. Additional surveys were recommended for certain plant and aquatic species.

TABLE 5-4  
Threatened and Endangered Species

County	Common Name	Scientific Name	Class	State Status <sup>a</sup>	Federal Status <sup>a</sup>
SAC, WB	Bald eagle	<i>Haliaeetus leucocephalus</i>	Bird	E	T (delisted 6/28/2007)
WB	Interior least tern	<i>Sterna antillarum athalassos</i>	Bird	E	E
WB	Piping plover	<i>Charadrius melodus</i>	Bird	E	T
SAC	King rail	<i>Rallus elegans</i>	Bird	E	
SAC	Northern harrier	<i>Circus cyaneus</i>	Bird	E	
SAC	Mudpuppy	<i>Necturus maculosus</i>	Amphibian	T	
SAC, WB	Topeka shiner	<i>Notropis topeka</i>	Fish	T	E
WB	Blacknose shiner	<i>Notropis heterolepis</i>	Fish	T	
WB	Pallid sturgeon	<i>Scaphirhynchus albus</i>	Fish	E	E
SAC	Creeper	<i>Strophitus undulatus</i>	Mussel	T	
SAC	Cylindrical papershell	<i>Anodontooides ferussacianus</i>	Mussel	T	
SAC	Ozark pigtoe	<i>Fusconaia ozarkensis</i>	Mussel	E	
SAC	Round pigtoe	<i>Pleurobema sintoxia</i>	Mussel	E	
SAC	Yellow sandshell	<i>Lampsilis teres</i>	Mussel	E	
SAC	Silvery blue	<i>Glaucopsyche lygdamus</i>	Insect	T	
WB	Dakota skipper	<i>Hesperia dacotae</i>	Insect	E	C
WB	Powesheik skipperling	<i>Oarisma powesheik</i>	Insect	T	
SAC	Spotted skunk	<i>Spilogale putorius</i>	Mammal	E	
WB	Silver buffalo-berry	<i>Shepherdia argentea</i>	Plant	T	
IDA, SAC, WB	Prairie bush clover	<i>Lespedeza leptostachya</i>	Plant		T
WB	Woolly milkweed	<i>Asclepias lanuginose</i>	Plant	T	
WB	Spring ladies'-tresses	<i>Spiranthes vernalis</i>	Plant	T	
IDA, SAC, WB	Western prairie fringed orchid	<i>Platanthera praeclara</i>	Plant	T	T
SAC	Blanding's turtle	<i>Emydoidea blandingii</i>	Reptile	T	

<sup>a</sup> State and federal status: E = endangered, T = threatened, C = candidate for federal Endangered Species Act (ESA) listing, S = sensitive

Additional plant surveys were conducted in October 2007 for the following species:

- Silver buffalo-berry
- Glomerate sedge
- Rocky Mountain sedge
- Tumble grass

Although most of the study area is agricultural, 17 unique sites were identified for conducting the additional plant surveys. The 17 sites were primarily located in ravines where steepness or wetness precluded row cropping. Most of the sites were disturbed as a result of grazing. No rare plant species were located during this survey.

Aquatic surveys were conducted in May 2008. The field surveys attempted to assess whether the species of concern were present as well as whether or not suitable habitat was present. Based on preliminary coordination and habitat requirements, the following freshwater species were surveyed:

- Mudpuppy
- Topeka shiner
- Blacknose shiner
- Pallid sturgeon
- Creeper
- Cylindrical papershell
- Ozark pigtoe
- Round pigtoe
- Yellow sandshell

Aquatic surveys occurred in the Boyer, Maple, and the Little Sioux rivers. High flow levels precluded in-water sampling on the Little Sioux River, and additional sampling will occur when flow levels return to near-normal levels. Both the Boyer and Maple River exhibit limited canopy cover, significant stream bank erosion and mobile stream bottoms yielding unsuitable habitat for the aforementioned aquatic species. The Little Sioux River is very turbid. It has a partially closed canopy with trees and grasses.

Overall stream quality was suboptimal with little woody debris, shifting sand bottom, and no aquatic vegetation.

### **No-Action Alternative**

The No-Action Alternative would not result in any impacts to threatened and endangered species.

### **Build Alternative**

There are no adverse impacts anticipated to threatened or endangered species as a result of the proposed action. Given the heavily farmed land, lack of upland or plains areas, and generally poor stream quality, suitable habitat for the species of concern does not appear to be present. While the characteristics observed in the Little Sioux River do not appear likely to support any of the threatened and endangered aquatic species, additional in-water sampling must be conducted in the Little Sioux River to rule out the possibility of certain aquatic species. This supplemental survey will occur when the river returns to normal flow levels.

### **Avoidance, Minimization, and Mitigation**

If any state of federally listed threatened or endangered species were encountered during the reconstruction of U.S. 20, efforts would be taken not to harm, harass, or disturb the species or habitat. In addition, specific measures will be taken in order to minimize the risk of impacting such areas, including avoidance of prime natural communities as well as impact control measures, such as erosion and sediment control.

## **5.3.5 Farmland**

Agricultural land, defined as land suitable for cultivation and other uses, has historically been an important resource in Iowa. Recognizing this, both state and federal legislation have been

enacted to preserve and protect agricultural land. At the federal level, the most important legislation regarding the preservation of agricultural land is the Farmland Protection Policy Act. The purpose of the act is to ensure that federal programs do not lead “to the unnecessary and irreversible conversion of farmland to nonagricultural uses.”

At the state level, there are two important pieces of legislation addressing farmland – Iowa Code 6B (eminent domain on farmland) and 306.9 (diagonal severances). When agricultural land meets the definition laid out in Iowa Code 6B, it requires a public involvement process.

According to Iowa Code 306.9, the relocation of primary highways through cultivated land shall be avoided to the maximum extent possible. Diagonal routes should be avoided if feasible and prudent alternatives exist, and existing right-of-way should be used to its full extent. If additional right-of-way is needed, it should be contiguous with the existing right-of-way.

### Existing Conditions

Agriculture is the major land use in the study area. There are 2,557 farms across the three counties of the study area, with an average size of 385 acres in Woodbury County, 430 acres in Sac County, and 429 acres in Ida County. Of the 914.6 acres of land not owned by Iowa DOT that would be converted to transportation use, 869.5 acres are used for agricultural purposes.

### No-Action Alternative

The No-Action Alternative would not result in any impacts on farmland. In addition, land currently owned by Iowa DOT that is currently being farmed would continue to be used for that purpose.

### Build Alternative

The Build Alternative would result in the conversion of 869.5 acres of farmland to transportation use (Table 5-5).

The farmland conversion results in an average of 19 acres per mile. While the acreage is large, all three counties are primarily devoted to farming. Across the 3 counties, more than 1 million acres of land are devoted to farming, thus the 869.5 acres affected by the project is far less than 0.1 percent of the 3-county total land devoted to farming. Additionally, there are no farm severances. All impacts are in the form of strip acquisitions.

TABLE 5-5  
Farmland Impacts

Segment	Acres to be Converted to Transportation
1	240.1
2	41.4
3	198.4
4	389.6
<b>Total</b>	<b>869.5</b>

### Avoidance, Minimization, and Mitigation

The design of the project was developed to avoid or minimize impacts to farmland to the extent possible. Any impacts will be coordinated with the USDA’s Natural Resources Conservation Service and Form AD-1006 has been prepared (Appendix D). No additional mitigation of this resource is anticipated.

## 5.4 Physical Impacts

### 5.4.1 Noise

Traffic noise consists of vehicular engine noise and tire noise from contact with the roadway surface. In general, noise can be defined as unwanted sound. Sound is produced by the vibration of sound pressure waves in the air, and sound pressure levels are expressed in units called decibels (dB). The type of scale that best approximates the frequency response of the human ear is called the A-scale. Therefore, noise levels are measured as and reported in A-weighted decibels (dBA). The A-weighted scale was devised to correspond with the ear's sensitivity, and sound levels are measured as dBA on that scale. Highway agencies use a 1-hour equivalent sound level,  $Leq(h)$ , as a descriptor of noise levels. Studies show that a change of 3 dBA is a barely perceivable change in noise, whereas a change of 10 dBA is perceived as being twice or half as loud.

The FHWA Title 23 CFR (23 CFR 772) has developed noise abatement criteria for assessing potential noise impacts. Additionally, guidelines are identified in *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, Technical Advisory T 6640.8A (FHWA, 1987). The Iowa DOT also protects the public from noise through Policy 500.07, *Highway Traffic Noise Analysis and Abatement*. The criteria set forth in the guidance consider appropriate noise levels based upon land use activity. For example, the noise abatement criteria (NAC) are 67 dBA for a residence and 72 dBA for a business. A traffic noise impact occurs when noise levels approach (in this case 66 dBA for residences and 71 dBA for businesses) or exceed the criterion for the defined land use activity, or if a substantial increase in predicted noise level occurs even though the applicable criterion has not been reached.

#### Existing Conditions

Vehicular traffic on U.S. 20 is the dominant source of noise in the project area. Examples of other noise sources include traffic on other local roadways, occasional aircraft over-flights, birds chirping, and occasional gusts of wind. The project corridor is dominated by rural land uses with an emphasis on mostly agricultural purposes. Most residences in Correctionville are located south of U.S. 20, with some to the north as well. Other noise-sensitive locations in Correctionville include Copeland Park, Walling River Access, Van-Houten House, Southwell Roadside Park, senior/assisted living community, and the River Valley High School. The majority of the residential use in Holstein is located to the north of U.S. 20. Other noise-sensitive locations in Holstein include the Char-Mac Senior Community and the Lohff-Schuman Community Center.

To determine noise impacts along U.S. 20, the noise model used peak-hour traffic volumes for existing (2006) and future conditions (design year 2035) developed from data forecasted by the Iowa DOT. Noise impacts exceeding federal and state criteria from peak-hour traffic conditions were assessed at noise-sensitive locations throughout the project area.

Noise level measurements were conducted at nine locations (Figures 5-5), eight in Correctionville and one in Holstein. The noise monitoring locations were selected based on review of plans and a project site inspection to determine the locations of representative receivers. The purpose of the noise level measurements was to determine the existing traffic noise levels and to validate the accuracy of traffic noise models in predicting traffic noise

exposure within the study area. The project area was closely inspected to accurately model the roadway and receiver locations.

### **No-Action Alternative**

One noise receiver, the Van Houten House, would exceed the NAC of 67 dBA under the no-action scenario. However, the 2035 no-action noise level is only a 2 dBA difference from current noise levels. As such, it is below the Iowa DOT definition of substantial increase.

### **Build Alternative**

One noise receiver, the Van Houten House, would exceed the NAC of 67 dBA. However, the peak hour traffic noise levels at this location would exceed NAC under either the build or no-action scenario, and increases by only 3 dBA from current noise levels. As such, it is below the Iowa DOT definition of substantial increase.

### **Avoidance, Minimization, and Mitigation**

On June 12, 1995, the FHWA issued revised guidance on traffic noise analysis and a memorandum to require all State Highway Agencies to adopt written noise policies according to the revised guidelines. The Iowa DOT established specific requirements for traffic noise abatement. Based on the requirements, no mitigation or project-related noise abatement strategies are required to address the minor noise impacts. However, construction noise will be minimized by the use of mufflers on construction equipment. Air compressors will meet federal noise level standards and will, if possible, be located away or shielded from residences and other sensitive noise receivers. Where pavement must be fractured or structures removed, care will be taken to prevent vibration damage to adjacent structures. In areas where construction-related vibration is expected, surveys may be conducted before construction begins to document any damage caused by highway construction.

## **5.4.2 Mobile Source Air Toxics**

This EA includes a basic analysis of the likely mobile source air toxic (MSAT) emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this EA. Because of these limitations, the following discussion is included in accordance with CEQ regulations [40 CFR 1502.22(b)] regarding incomplete or unavailable information.

### **Information that is Unavailable or Incomplete**

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

## Emissions

The USEPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model; emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to occur on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of performance monitoring under the conformity rule, USEPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

## Dispersion

The tools to predict how MSATs disperse are also limited. USEPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago to predict episodic concentrations of carbon monoxide to determine compliance with the National Ambient Air Quality Standards. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times and at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

## Exposure Levels and Health Effects

Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in existing techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Assessing exposures are difficult because of the difficulty in accurately calculating annual concentrations of MSATs near roadways, and in determining the periods in a year when people are exposed to these concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions

would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decisionmakers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

### **Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs.**

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of USEPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or state level.

USEPA is in the process of assessing the risks of various kinds of exposures to these pollutants. USEPA's Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at [www.epa.gov/iris](http://www.epa.gov/iris). The following toxicity information for the six prioritized MSATs was taken from the IRIS database's *Weight of Evidence Characterization* summaries. This information is taken verbatim from USEPA's IRIS database and represents the agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases. Diesel exhaust also represents

chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a nonprofit organization funded by USEPA, FHWA, and industry, has undertaken a series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes—particularly respiratory problems. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria ( $\text{CO}_2$ ,  $\text{O}_3$ ,  $\text{NO}_x$ , and  $\text{PM}_{10}$ ) and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable the project team to perform a more comprehensive evaluation of the health impacts specific to this project.

**Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community.** Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have “significant adverse impacts on the human environment.”

As noted, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by FHWA, “A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives,” at [www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm](http://www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm). For each alternative in this EA, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMTs), assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build Alternative is slightly higher than that for the No-Action Alternative. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway

corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to USEPA's MOBILE 6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Regardless of whether the Build Alternative is implemented, emissions will likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great, even after accounting for VMT growth, that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives will cause some traffic to move closer to nearby homes, schools, and businesses; therefore, under each alternative, there may be localized areas where ambient concentrations of MSATs could be higher under the Build Alternative than the No-Action Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections throughout Correctionville in Segment 2. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Action Alternative cannot be accurately quantified because of the inherent deficiencies of current models. When a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Action Alternative, but this could be offset because of increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, will, over time, cause substantial reductions that, in almost all cases, will cause regionwide MSAT levels to be significantly lower than today.

FHWA has provided a qualitative analysis of MSAT emissions relative to the various alternatives and has acknowledged that the project may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

### 5.4.3 Regulated Materials Sites

Properties where hazardous materials or wastes have been stored may present a future risk if spills or leaks have occurred. Additionally, transportation of hazardous materials or wastes may result in an occasional spill or leak. Contaminated or potentially contaminated properties are of concern for transportation projects because of the potential liability for any cleanup costs resulting from right-of-way acquisition and the safety concerns related to exposure to contaminated soil, surface water, or groundwater associated with project construction.

## Existing Conditions

A Phase 1 Environmental Site Assessment was conducted on each of three separate sections of the U.S. 20 project corridor. All three assessments were conducted by Montgomery Watson and were performed in accordance with procedures outlined in the American Society of Testing and Materials practice E 1527-00. Sites determined to have recognized environmental concerns (RECs) were ranked as low, medium, or high risk RECs. A total of 67 RECs were identified throughout the U.S. 20 project corridor.

## No-Action Alternative

The No-Action Alternative would not result in any impacts to regulated materials sites.

## Build Alternative

The Build Alternative could result in impacts to some of the 67 (five high risk) RECs identified throughout the U.S. 20 project corridor. There are six sites in Segment 1, all of which present low or medium risk, associated primarily with aboveground storage tanks (ASTs) and farming operations; and eight sites in Segment 2, four of which present high risk associated with industrial operations in the City of Correctionville. Twenty-seven sites are located in Segment 3, all of which are low or medium risk sites, associated with ASTs and farming operations; 26 sites are located in Segment 4, one of which is a high-risk scrap yard near IA 110.

If any such contamination is discovered during construction, appropriate measures would be taken at that time. An assessment of the level of contamination and method of treatment would be coordinated with the Iowa DOT.

## Avoidance, Minimization, and Mitigation

No avoidance, minimization, or mitigation of this resource is anticipated. Prior to construction, a systematic evaluation of hazardous waste sites will be completed to determine the appropriate level of remediation activities necessary to meet state and federal hazardous waste site regulations.

## 5.5 Cumulative Impacts

A cumulative impact is “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). Cumulative impacts include the direct and indirect impacts of a project together with impacts from reasonably foreseeable future actions. For a project to be reasonably foreseeable, it must have advanced far enough in the planning process that its implementation is likely. Reasonably foreseeable future actions are not speculative, are likely to occur based on reliable sources, and are typically characterized in planning documents.

The assessment of cumulative impacts of federal, state, and private actions is required by Council on Environmental Quality (CEQ) regulations developed for implementing NEPA. This cumulative impact analysis was conducted in accordance with CEQ guidance (CEQ,

January 1997; CEQ, June 24, 2005) and other sources, including FHWA's "Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process" (FHWA, January 2003) and FHWA's "Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process" (FHWA, April 1992).

Section 5, *Affected Environment and Environmental Consequences*, of this EA indicates that the proposed U.S. 20 Build Alternative would affect wetlands, surface water resources/water quality, and farmlands. Therefore, these resources are the focus of the cumulative impacts analysis.

### 5.5.1 Existing Conditions

Several projects are planned or under construction in or near the U.S. 20 study area. Some of these projects may not occur during the same time frame as the U.S. 20 project, but are included here because past and future actions have to be considered in the cumulative impacts analysis (CEQ, June 24, 2005). The following sections list these projects.

#### Ongoing Projects

- Platinum Ethanol, LLC, a new ethanol plant in Arthur, IA, about 10 miles south of U.S. 20 in Ida County. Construction began in November 2006 and is projected to be complete in July 2008. At full capacity, the plant is expected to produce 110 million gallons of ethanol per year and will use 39 million bushels of corn per year.
- Maple River Energy, LLC, a new biodiesel plant in Galva, IA, about 5 miles north of U.S. 20 in Ida County. Construction began in July 2007 and is projected to be complete in late summer or early fall 2008. Annually, the plant is projected to produce 5 million gallons of biodiesel fuel from 3 to 5 million bushels of locally produced soybeans.

#### Reasonably Foreseeable Future Projects

- The Tri-State Equestrian Center, a 160,000 square foot equestrian arena with 500 stalls is planned for Merville, in Woodbury County. This is projected to be the largest equestrian center in the Midwest and is expected to host 35 to 45 events per year.
- Several small housing developments with less than 15 lots each are being considered in Correctionville and Merville.
- A potential new hotel is being considered in Holstein.
- Several bridge replacement projects are scheduled between fiscal years 2009 and 2012.

### 5.5.2 No-Action Alternative

Under the No-Action Alternative, no transportation improvements would occur in the project study area. Impacts associated with this alternative include decreased safety and increased maintenance due to increased truck traffic. However, the future projects noted above are likely to occur even if the U.S. 20 project is not constructed.

### 5.5.3 Build Alternative

The U.S. 20 project would result in physical impacts within and adjacent to the existing highway right of way. Specifically, the U.S. 20 project would impact 8.3 acres of wetlands, 16,000 linear feet of stream channel, and 869.5 acres of farmland. Although the ongoing projects are not located in the same area as the U.S. 20 project, they affect the same resources. For instance, construction of the Platinum Ethanol plant impacted 400 linear feet of stream channel for placement of a culvert and an outfall structure and filled 0.2 acres of wetlands. Construction of the Maple River Energy plant converted 28 acres of farmland to industrial use. Table 5-6 summarizes the cumulative impacts of the U.S. 20 project and ongoing projects.

TABLE 5-6  
Potential Cumulative Effects

Resources Affected	Direct and Indirect Effects	Potential Cumulative Effects
Wetlands	Conversion of 8.9 acres for U.S. 20 and 0.2 acres for Platinum Ethanol, LLC	Combined regional effects of wetland impacts associated with other regional transportation and industrial development projects (ethanol plants), including loss of habitat, loss of water quality, and flood attenuation benefits.
Water Resources/ Quality	16,000 lf. for U.S. 20 and 400 lf. for Platinum Ethanol, LLC	Increased sedimentation and pollutant loading; altered hydrology; potential impact to designated water uses; habitat fragmentation and loss; more rapid, higher discharge runoff pattern.
Farmland	Conversion of 869.5 acres for U.S. 20 and 28 acres for Maple River Energy, LLC	Loss of productive farmland.

The impacts of the reasonably foreseeable future projects are not yet identified and quantified. However, construction of the Tri-State Equestrian Center, the small housing developments, the hotel, and the bridge replacement projects could result in increased runoff and sedimentation being introduced into the Little Sioux River, the Maple River, or their tributaries. Similarly, construction of the Tri-State Equestrian Center, the small housing developments, and the hotel could result in the conversion of farmland and wetlands to developed areas.

### 5.5.4 Avoidance, Minimization, and Mitigation

The U.S. 20 project has been planned to avoid and minimize impacts to resources. As a result of coordination with regulatory and resource agencies, the Preferred Alternative in Segment 1 was developed to minimize impacts to stream channels and wetlands. Remaining impacts that cannot be avoided will be mitigated. Impacts to farmlands will be minimized by using existing right-of-way to the maximum extent possible and by not causing diagonal severances.

The overall cumulative impact of the U.S. 20 project, the ongoing projects, and the reasonably foreseeable future projects to the resources examined in this EA have been evaluated and are not considered to be collectively significant.

SECTION 6

# Disposition

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The EA concluded that the proposed action meets the project purpose and need. The proposed action will have no significant adverse social, economic, or environmental impacts, and therefore, preparation of an environmental impact statement is not required. Unless significant impacts are identified as a result of public comments on this EA or at the public hearing, a finding of no significant impact will be prepared for the proposed action. Table 6-1 lists the required permits.

TABLE 6-1  
Permits and Approvals

Permit or Approval	Granting Agency	Reason
Section 404 permit, Clean Water Act	U.S. Army Corps of Engineers	Authorization is required to place dredged or fill material in wetlands or other waters of the U.S. This would occur from pier placement in the Little Sioux River and is likely to be authorized under Nationwide Permit 14. In addition to authorization for permanent impacts, Nationwide Permit 33 may be required for temporary impacts related to construction access.
Sovereign Lands Construction Permit	Iowa DNR	This permit is required for construction on, above, or under state-owned water and land in Iowa. This would occur with construction of a bridge on and over the Iowa part of Little Sioux River.
Section 401 of the Clean Water Act, Water Quality Certification	Iowa DNR	This certification is required as part of the Section 9 bridge permit and Section 404 permit issuance.
National Pollutant Discharge Elimination System general stormwater discharge permit for construction activities, Clean Water Act	Iowa DNR	The NPDES permit, required for construction sites greater than 1 acre in size, authorizes (with implementation of permit-specified mitigation) the discharge of stormwater associated with site construction activities.
Floodplain Development Permit, including no-rise certification	Iowa DNR	A Floodplain Development Permit must be obtained from state-designated agencies as authorized by FEMA for various types of floodway/floodplain development as part of participation in the National Flood Insurance Program.
Section 7 of the Endangered Species Act	U.S. Fish and Wildlife Service	Section 7 consultation with the USFWS must occur regarding potential impacts on threatened and endangered species and their habitats.
Section 106 of the National Historic Preservation Act	Iowa State Historic Preservation Office	Section 106 consultation must occur regarding potential impacts on historic/architectural properties and archaeological sites.
Air Quality Construction Permit	Iowa DNR	The permit is required if a new emission unit is needed for construction (such as portable batch plant for paving applications). Acquisition of the permit may be the responsibility of the roadway construction contractor.

SECTION 7

# Comments and Coordination

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This section summarizes agency and tribal coordination and public involvement that occurred during the development of the EA. Future public involvement efforts planned for the project are also discussed.

## 7.1 Agency Coordination

Early coordination was initiated in October 2000 through letters to the federal, state, and local government agencies to solicit input on the proposed U.S. 20 improvements project. The project was re-coordinated with federal, state, and local agencies in March 2007 because of the length of time that had passed since the initial coordination. Table 7-1 lists the agencies that were contacted as part of the early coordination efforts. Local agencies expressed support for the project. Responses from agencies noted the potential presence of environmental resources in the study area. These resources were included in the field investigations completed during the summer and fall of 2007 and the spring of 2008. Written responses to the 2000 and 2007 early coordination efforts are provided in Appendix E. The comments received from the initial letters sent in 2000 are summarized in Table 7-2.

TABLE 7-1  
Agencies Contacted

Early Coordination, October 2000	Early Coordination, March 2007
<b>Federal Agencies</b>	
Federal Aviation Agency—Airports Division	Federal Aviation Administration
Federal Emergency Management Agency	Federal Emergency Management Agency
U.S. Army Corps of Engineers—Rock Island District	Federal Railroad Administration
U.S. Department of Agriculture—State Soil Conservation	National Park Service
U.S. Department of Housing and Urban Development	U.S. Coast Guard
U.S. Department of the Interior—National Park Service	U.S. Department of Agriculture, State Conservationist
U.S. Department of the Interior—Office of Environmental Policy and Compliance	U.S. Department of Housing and Urban Development, Regional and Local Offices
U.S. Environmental Protection Agency, Region 7	U.S. Department of the Interior, Office of Environmental Policy and Compliance
U.S. Fish and Wildlife Service—Rock Island Office	U.S. Environmental Protection Agency, National Environmental Policy Act Team
	U.S. Fish and Wildlife Service—Rock Island Office
	U.S. Army Corps of Engineers—Omaha District

TABLE 7-1  
Agencies Contacted

Early Coordination, October 2000	Early Coordination, March 2007
<b>State Agencies</b>	
Iowa Department of Natural Resources, Director	Iowa Department of Natural Resources, Conservation and Recreation Division
Iowa Department of Natural Resources, Environmental Protection Division	Iowa Department of Natural Resources, Environmental Services Division
	Iowa Department of Natural Resources, LAWCON Inquiries
	Iowa Department of Natural Resources, NW Wildlife Biologist
	Iowa Department of Natural Resources, SW Wildlife Biologist
<b>Local Agencies</b>	
City of Correctionville—Mayor	City of Correctionville—Mayor
City of Cushing—Mayor	City of Cushing—Mayor
City of Early—Mayor	City of Early—Mayor
City of Holstein—Mayor	City of Galva—Mayor
City of Merville—Mayor	City of Holstein—Mayor
Ida County Conservation Board	City of Lawton—Mayor
Ida County Engineer	City of Merville—Mayor
Sac County Conservation Board	City of Schaller—Mayor
Sac County—Engineer	Ida County Board of Supervisors
Woodbury County Conservation Board	Ida County Conservation Board
Woodbury County—Engineer	Ida County Conservationist
	Ida County—Engineer
	Ida County Soil and Water Conservation
	Region XII Council of Governments
	Sac County Board of Supervisors
	Sac County Conservation Board
	Sac County Conservationist
	Sac County—Engineer
	Sac County Soil and Water Conservation
	Siouxland Interstate Metropolitan Planning Council
	Woodbury County Board of Supervisors
	Woodbury County Conservation Board
	Woodbury County Conservationist
	Woodbury County—Engineer
	Woodbury County Soil and Water Conservation

TABLE 7-2  
Early Coordination, October 2000/March 2007

	October 2000	March 2007
<b>Federal Agencies</b>		
U.S. Army Corps of Engineers—Rock Island District	The Rock Island District Corps of Engineers identified that the project study area is outside the geographic (civil works) boundaries of Rock Island District and recommended coordination with Omaha District. Locations with fill or dredged material require Department of the Army authorization under Section 404 of Clean Water Act including a wetland determination. They enclosed a Joint Application Packet for review.	—
U.S. Department of Agriculture—State Soil Conservation	The State Conservationist advised that Form AD-1006 should be completed and submitted to the NRCS district conservationists	—
U.S. Department of Housing and Urban Development (HUD)	No comment from HUD because of a lack of NEPA practitioners on staff.	—
U.S. Environmental Protection Agency, Region 7	USEPA, Region 7 advised that Joe Cothorn of the NEPA office is the point of contact for further coordination.	USEPA NEPA team leader sent GIS images from the USEPA database for inclusion into the project GIS database.
U.S. Fish and Wildlife Service—Rock Island Office	U.S. Fish and Wildlife Service sent a list of species of concern in the U.S. 20 project study area	
Federal Aviation Administration	—	The Federal Aviation Administration noted that they have no comments concerning environmental work.
<b>State Agencies</b>		
Iowa Department of Natural Resources — Director	Iowa DNR indicated that surveys will need to be conducted for the endangered plains pocket mouse ( <i>Perognathus flavens</i> ) in the Loess Hills prairies and for any other threatened or endangered plants. It noted that the project may affect the north side of the Sioux Bend Wildlife Area in Woodbury County. Iowa DNR requested information on whether the project would affect Kiowa Marsh and recommended coordination with Iowa DNR fisheries if deep water borrow pits would result from construction.	—
Iowa Department of Natural Resources, Environmental Services Division	Iowa DNR searched its database for possible 6(f) properties in the study area. None were identified.  The Iowa DNR Division of Parks, Recreation, and Preserves expressed interest in obtaining environmental GIS files for the project.  Iowa DNR Contaminated Sites Section recommended coordination with the Iowa DNR Records Center to search files for contaminated sights.	A DNR biologist expressed interest in an alternative that would minimize impacts to wetlands and environmentally sensitive areas and provide mitigation where required. The 64-acre state-owned Sioux Bend Wildlife Area is located west of Correctionville. The DNR would like to be notified when the proposed U.S. 20 route is identified.

TABLE 7-2  
Early Coordination, October 2000/March 2007

	October 2000	March 2007
Iowa Department of Natural Resources, Land and Water Conservation Fund Federal Aid Coordinator Inquiries	—	The coordinator identified two projects near U.S. 20 located around 8th Street in Correctionville. If the bypass is located to the north, the sites will not be affected; if to the south, further coordination with the Fund is requested.
State Historian	State Historical Society requested identification of the area of potential effect, the type of cultural resources that may be located within that area, and historic properties on NRHP.	—
<b>Local Agencies</b>		
City of Correctionville—Mayor	The mayor expressed opinion that the Correctionville bypass should be located north of Correctionville for many reasons such as a proposed bike path to the south, distance to the north is shorter with fewer expected impacts, economic impacts, and newly constructed sewer system to the south. The mayor indicated that no hazardous waste sites along the route are known.  Note: On May 12, 2008, the Correctionville City Council stated that they support the through-town expansion of U.S. 20 to four or five lanes through Correctionville.	—
City of Holstein—Mayor	The City provided information on locations of water wells and pipeline near U.S. 20 and mentioned a potential underground storage tank site: an old gas station to the south side of the west junction of U.S. 20 and Hwy 59. The City indicated that improvements will enhance economic development for northwest Iowa.	—
Region XII Council of Governments	The Council reviewed the project favorably but did not guarantee funding.	—
Sac County Conservation Board Sac County Soil and Water Conservation	Sac County Conservation Board identified a potential site for wetland mitigation southeast of Early, Iowa.	The Sac County Soil and Water Commissioner indicated support for improvements to U.S. 20 but is concerned about adverse impacts to agricultural land.
Woodbury County Conservation Board	—	The Board recommends that improvements be located south of U.S. 20 between Merville and Correctionville. The Board prefers the Correctionville bypass to the north, because of park lands and the paved recreational trail to the south of the city. The Board recommends that native prairie species be used to reseed newly constructed slopes and medians throughout the project. It recommended that the Iowa DOT incorporate a recreational trail in the project design within the DOT's right-of-way.

## 7.2 NEPA/404 Merger Coordination

Agency coordination associated with the project included scoping and early coordination tasks summarized in the earlier sections, as well as the NEPA/404 merger process. FHWA and Iowa DOT coordinated with the resource/regulatory agencies using the Iowa DOT concurrence point process which integrates compliance with NEPA and Section 404 of the Clean Water Act. Concurrence points are associated with milestones of the NEPA process where the Iowa DOT requests agency concurrence regarding four points: (1) purpose and need, (2) alternatives to be analyzed, (3) alternatives to be carried forward, and (4) the Preferred Alternative. The intent of the concurrence point process is to encourage early participation by the regulatory agencies in an effort to validate decisions made by the transportation agency during the NEPA process and to avoid revisiting decisions after effort has been expended performing detailed analyses and design.

On January 30, 2008, a NEPA/404 concurrence meeting was held. After a brief discussion of the project overview and background the agencies concurred on points 1, 2, and 3. The meeting was attended by Iowa DOT, Iowa DNR, USFWS, USACE, and FHWA. There was concern about the level of information available in order to concur on Point 3, but since all the alternative options were recommended to be carried forward for additional review, the agencies concurred on Point 3 as well. The agencies expressed concern about the water resources present in Segment 1. That led to an investigation of a crossover option within the segment, which was found to be infeasible. See Section 4.2.2.1 for additional information. Appendix F contains minutes from the meeting.

The NEPA/404 Concurrence Meeting for Concurrence Point 4 was held July 23, 2008. Agencies in attendance concurred on Point #4 Preferred Alternative. Meeting materials and a summary packet have been provided to agencies not in attendance.

## 7.3 Public Involvement

The public involvement program used during the development of this EA was designed to engage the general public and interested parties in the project. Within the study area, there is strong support for the project. Residents and local governments have formed a group, the U.S. 20 Corridor Association, to support the widening of U.S. 20 to a four-lane highway.

### 7.3.1 Public Meetings

Public information meetings were held on November 8–10, 1999. The purpose was to introduce possible alternatives for the project and to obtain comment from the public regarding the proposals. One hundred five people attended the November 8 meeting in Schaller, 119 attended the November 9 meeting in Holstein, and 164 attended the November 10 meeting in Correctionville. Twenty-four written comments were received during the comment period following the meetings. The comments concerned property impacts, interchange improvements, traffic signaling, pavement options, and safety.

Two additional public information meetings for the project were held on June 5, 2007. Given the length of the corridor, the meetings were held in Holstein and Correctionville on the

same evening to allow interested citizens the greatest opportunity to provide comments. The meetings were attended by 167 people: 74 at Correctionville and 93 at Holstein.

The public in attendance at both meetings was largely supportive of the project, and most felt the project was long overdue. The public expressed concerns about the existing facility that included safety and the amount of traffic on U.S. 20.

The Correctionville meeting discussions focused primarily on the two alternatives presented for the community: the Correctionville bypass, and the five-lane improvement on existing alignment. Landowners who could be affected by the proposed bypass expressed concerns about the impacts and objected to the relocation of U.S. 20. Those supporting the relocation discussed the positive aspects of moving traffic away from the community, safety of the alternative and minimal impacts to the community. Many recognized the potential higher costs associated with the bypass alternative because of the additional right-of-way and the number of new structures required.

Residents were split between the lesser impacts associated with the through-town alternative and the possibility for future development associated with the bypass alternative. The Holstein meeting was attended by property owners along the corridor, nearby city officials, and U.S. 20 highway corridor users. Several emphasized the long history of awaiting a four-lane facility and want to see it happen in the near future. A few provided input as to features that should be noted as project development proceeds. There was general support for "straightening" U.S. 20 at the Maple River area and the proposed realignment of the south leg of M25 at Galva. Although discussion about the Correctionville Bypass was limited at the Holstein meeting, those commenting favored the through movement of traffic on the corridor as a four-lane facility and expressed concern about the safety of a five-lane highway through Correctionville.

Based on the input of the agencies at the January 2008 Concurrence Point meeting, the Iowa DOT determined that widening U.S. 20 to the north was a reasonable option to be considered based on avoidance and minimization of impacts to water resources. Because the public had not had the opportunity to comment on this alternative at previous public information meetings, the Iowa DOT contacted all property owners in segment 1 by letter on May 6, 2008 informing them that the agency was considering widening to the north. Iowa DOT representatives met with interested segment 1 land owners on June 3, 2008. Of the five property owner responses, three preferred the option of widening segment 1 to the south, and two had no preference.

### **7.3.2 Future Public Involvement**

A public hearing will be held on the EA in the summer of 2008.

## **7.4 Tribal Coordination**

Under the guidance of Section 106 of the National Historic Preservation Act of 1966 (16 USC 470f), states are required to coordinate with Indian tribes if a project could affect lands with cultural or religious significance. Each state has its own process of notification. Iowa employs a four-step process, beginning with early coordination. The following tribes were contacted to seek comment concerning the project:

- Otoe-Missouri Tribe
- Iowa Tribe of Oklahoma
- Iowa Tribe of Kansas and Nebraska
- Sac and Fox Nation of Missouri
- Sac and Fox Nation of the Mississippi in Iowa
- Sac and Fox Nation of Oklahoma

To date, no responses have been received.

## SECTION 8

# References

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**Appendix A**

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**Streamlined Resource Summary**

**SOCIOECONOMIC IMPACTS SECTION:**

<b>Community Cohesion</b>	
Evaluation:	Not impacted
Method of Evaluation:	Research, field surveys
Completed by and Date:	CH2M HILL, June 2007
<b>Churches and Schools</b>	
Evaluation:	Not impacted
Method of Evaluation:	Internet search, field surveys
Completed by and Date:	CH2M HILL, June 2007
<b>Environmental Justice</b>	
Evaluation:	Not impacted
Method of Evaluation:	US Census Data (2000)
Completed by and Date:	CH2M HILL, December, 2007
<b>Economic</b>	
Evaluation:	Not impacted
Method of Evaluation:	Field surveys, Online research, US Census Data (2000)
Completed by and Date:	CH2M HILL, June 2007 – December 2007
<b>Joint Development</b>	
Evaluation:	Not impacted
Method of Evaluation:	Agency coordination, online search
Completed by and Date:	CH2M HILL, 2007
<b>Bicycle and Pedestrian Facilities</b>	
Evaluation:	Not impacted
Method of Evaluation:	Agency coordination, online research, field surveys
Completed by and Date:	CH2M HILL, 2007

**SOCIOECONOMIC IMPACTS SECTION Continued:**

<b>Construction and Emergency Routes</b>	
<b>Evaluation:</b>	Not impacted
<b>Method of Evaluation:</b>	Online searches, agency coordination, field surveys
<b>Completed by and Date:</b>	CH2M HILL, 2007
<b>Transportation</b>	
Evaluation:	Not impacted
Method of Evaluation:	Online searches, agency coordination, field surveys
Completed by and Date:	CH2M HILL, 2007

**CULTURAL IMPACTS SECTION:**

<b>Cemeteries</b>	
Evaluation:	Not impacted
Method of Evaluation:	Online research, agency coordination, field surveys, Phase I cultural resource surveys
Completed by and Date:	CH2M HILL August 2000, June 2007; Louis Berger, 2007-2008

**NATURAL ENVIRONMENT IMPACTS SECTION:**

<b>Wild and Scenic Rivers</b>	
Evaluation:	Not impacted
Method of Evaluation:	Agency coordination, documents search
Completed by and Date:	CH2M HILL, 2000, 2007
<b>Wildlife and Habitat</b>	
Evaluation:	Not impacted
Method of Evaluation:	Biological Assessments
Completed by and Date:	CH2M HILL June 2007, October 2007, May 2008
<b>Woodlands</b>	
Evaluation:	Not impacted
Method of Evaluation:	Agency Coordination, Research, Field Surveys
Completed by and Date:	CH2M HILL June 2007, October 2007

**PHYSICAL IMPACTS SECTION:**

<b>Air Quality</b>	
Evaluation:	Not impacted
Method of Evaluation:	Online research, Mobile Source Air Toxics Assessment
Completed by and Date:	CH2M HILL, 2007-2008
<b>Energy</b>	
Evaluation:	Not impacted
Method of Evaluation:	Documents search, field surveys
Completed by and Date:	CH2M HILL, 2007
<b>Visual</b>	
Evaluation:	Not impacted
Method of Evaluation:	Agency coordination, field surveys
Completed by and Date:	CH2M HILL, 2007
<b>Utilities</b>	
Evaluation:	Not impacted
Method of Evaluation:	Documents search, online research, field surveys
Completed by and Date:	CH2M HILL, 2007

**Appendix B**

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**SHPO Concurrence Letters**

DEC 13 2007



# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097  
515-239-1726 FAX

December 7, 2007

Ref No:NHS-20-1(77)- -19-97  
NHS-20-2(53)- -19-47  
NHS-20-2(54)- -19-47  
NHS-20-2(55)- -10-81  
Woodbury, Ida, and Sac  
Primary

Mr. Doug Jones  
Review and Compliance  
Bureau of Historic Preservation  
State Historical Society of Iowa  
600 East Locust  
Des Moines, IA 50319-0290

R&C: 990300074

Dear Doug:

**RE: Phase I Archaeological Investigations for U.S. Highway 20  
Between County Highway K42-West of Lawton and U.S. Highway 71  
Early in Woodbury, Ida and Sac Counties, Iowa**

Enclosed for your review and comment is the Phase I Archaeological Investigation for the above-mentioned federal-funded project. This project proposes a series of road improvement projects for the U.S. Highway 20 corridor in the counties of Woodbury, Ida and Sac. These improvements include the widening of the existing two-lane highway to a four-lane highway, the construction of new interchanges, realignment of cross streets, and highway bypasses.

The project corridor surveyed by this investigation encompasses an area of potential impact that follows U.S. 20 for approximately 52 miles. The corridor width varies and has a maximum extent of 1000 ft beyond the current right-of-way. This investigation surveyed a total area of 8270 acres.

This archaeological investigation was conducted using an extensive archival / records search. A pedestrian survey was conducted as well as shovel-testing and geomorphologic testing. During this investigation, 70 previously unrecorded archaeological sites were identified. Of these sites, fourteen were determined to require further Phase II investigations to determine any possible eligibility for the National Register of Historic Places.

After a review of the current design plans, 6 of the 14 Phase II recommended sites will be impacted by this project (The remaining 8 sites will be avoided by the project and not impacted.) Due to this, Phase II investigations are planned for each archaeological which are described as follows:

13IA31- This site represents a historic farmstead that was occupied from the early 20<sup>th</sup> to the mid-20<sup>th</sup> Century. Due to the potential of this site to provide new information regarding historic farming and settlement in Woodbury County, Iowa, a Phase IIA archival research investigation is recommended for this site.

13WD109-This site represents a historic farmstead that was occupied from 1902 and 1969. Due to the potential of this historic site contributing to a greater understanding of historic farming and settlement of Woodbury County, Iowa, a Phase IIA archival research investigation is recommended for it. If the Phase IIA shows that this site has potential for the National Register, then a Phase IIB, field investigation is recommended for this site.

13WD130-This site represents a small Woodland open habitation site. This site includes two shallow pit features, one of which appears to be shell midden. No evidence of mounds was noted and no human remains were recovered. The presence of possible pit features, intact soils, and a variety of artifact types suggest that this site has potential to contribute important new information about the prehistory of the Little Sioux River Valley and Woodbury County, Iowa. Due to this, Phase II investigations are recommended for this site.

13WD132-This site represents Woodland and underdetermined prehistoric stratified campsite. The intact archaeological deposits, including a buried A horizon, have potential to contribute important new information about the prehistoric use of the Little Sioux River valley. Due to this, a Phase II investigation is recommended for Site 13WD132.

13WD135- This site represents a Woodland Period open habitation site. During the investigation one possible hearth was identified along with various prehistoric materials that included fire cracked rock. Due to this and possible intact archaeological deposits this site may have high potential to contribute new information about the settlement prehistory of the area and the organization of the site. Due to this, Phase II investigations are recommended for Site 13WD135.

13WD136- This site represent an Woodland open habitation site that appears to be a large prehistoric campsite. Prehistoric artifacts were recovered during the Phase I investigation below the plow-zone, but no features were identified in the shovel tests. Due to the number of artifacts recovered, a Phase II investigation is recommended for this prehistoric site.

Once these Phase II investigations are completed, the Phase II archaeological report and its findings and determinations will be forwarded to you for your review and comment.

In addition to the Phase II investigations, a supplemental Phase I investigation will be conducted to survey a series of land parcels that were not investigated during the original Phase I investigation. Property access was denied to the parcels by the landowners.

If you concur with the findings and conclusions of this Phase I investigation, please sign the concurrence line below and return this letter to our office. If you have any questions regarding the findings and recommendations of this Phase I archaeological investigation, please feel free to contact me.

Sincerely,



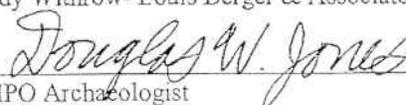
Matthew J.F. Donovan  
Office of Location and Environment  
Matt.Donovan@dot.iowa.gov

MJFD

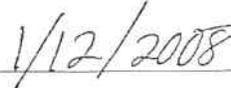
Enclosure

cc: Rich Michaelis- District 3 Engineer  
Dee Ann Newell- OLE / NEPA  
Roger Larsen- OLE / Location  
Randy Withrow- Louis Berger & Associates.

Concur:

  
SHPO Archaeologist

Date:





# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097  
515-239-1726 FAX

March 17, 2008

Ref. No: NHS-20-1(77)- -19-97  
NHS-20-2(53)- -19-47  
NHS-20-2(54)- -19-47  
NHS-20-2(55)- -10-81  
Woodbury, Ida, and Sac  
Primary

Mr. Ralph Christian  
Review and Compliance  
Bureau of Historic Preservation  
State Historical Society of Iowa  
600 East Locust  
Des Moines, IA 50319-0290

R&C: 990300074

Dear Ralph:

**RE: Determination of Effect Regarding Architectural Resources for  
U.S. Highway 20 Project between County Highway K42-  
West of Lawton and U.S Highway 71  
Woodbury, Ida and Sac Counties, Iowa- *Finding of No Adverse Effect***

Enclosed for your review is this supplemental letter, along with specific design plans, discussing the determination of effect for those properties found eligible for the above-mentioned federal-funded project. As previously mentioned to you in the November 13, 2007 summary letter, which described the findings of the Phase I Architectural Investigation, this project proposes a series of road improvement projects for the U.S. Highway 20 corridor in the counties of Woodbury, Ida and Sac. These improvements include the widening of the existing two-lane highway to a four-lane highway, the construction of new interchanges, realignment of cross streets, and highway bypasses.

The project corridor investigated during the 2007 architectural survey encompasses an area of potential impact that follows U.S. 20 for approximately 52 miles. The corridor width varies with a maximum extent of 1000 ft. beyond the current right-of-way. A total area of 8270 acres was reviewed and surveyed.

The 2007 survey recorded the following properties as eligible for the National Register of Historic Places: One farmstead near Merville (97-05004), three residences in Correctionville (97-04313, 97-04315, and 97-04327) and one residence in Merville (97-05009), all of which were determined to have architectural distinction sufficient for listing for the National Register under Criterion C.

Of these properties investigated, only one had the potential to be impacted by this project, the Van Houten House (Property 97-04327) in the City of Correctionville, Iowa. The Van Houten House represents a significant example of a Queen Anne style structure constructed in 1910. Due to this, the house was determined eligible for the National Register under Criterion C.

Please note that the setting of the Van Houten's setting has been altered with the removal of vegetation and associated outbuildings.

After reviewing the current design plans and consulting with the project engineers, the Van Houten House structure will not be impacted by this project. The current design plan will leave approximately 20 to 25 ft. buffer between the house and the required project right-of-way. Due to this, along with the understanding that the surrounding setting and property area has been previously disturbed and impacted, the determination for the Van Houten House is *no adverse effect*.

Please also note that the finding of No Adverse Effect to the Van Houten House Property would be considered a *de minimis* 4(f) impact to the property.

If you concur with this determination of **No Adverse Effect**, *with the understanding that the Van Houten house structure will not be impacted by this project*, please sign the concurrence line below, add your comments and return this letter. If you have any questions, please feel free to contact me.

Sincerely,



MJFD

Enclosure

cc: Rich Michaelis- District 3  
Janet Vine- OLE / NEPA  
Roger Larsen- OLE / Location  
Camilla Deiber- Louis Berger / Architectural Historian

Matthew J.F. Donovan  
Office of Location and Environment  
Matt.Donovan@dot.iowa.gov

Concur \_\_\_\_\_  
SHPO Historian

Date

*April 19, 2008*

Comments:

MAR 21 2008



# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097

515-239-1726 FAX

March 18, 2008

Ref. No: NHS-20-1(77)-19-97

NHS-20-2(53)-19-47

NHS-20-2(54)-19-47

NHS-20-2(55)-10-81

Woodbury, Ida, and Sac  
Primary

Mr. Doug Jones  
Review and Compliance  
Bureau of Historic Preservation  
State Historical Society of Iowa  
600 East Locust  
Des Moines, IA 50319-0290

R&C: 990300074

Dear Doug:

**RE: Phase II Archaeological Investigations for U.S. Highway 20  
Between County Highway K42-West of Lawton and U.S. Highway 71  
Early in Woodbury, Ida and Sac Counties, Iowa**

Enclosed for your review and comment are the Phase II Archaeological Investigations for six archaeological sites for the above-mentioned federal-funded project. As described to you in the December 7, 2007 letter, this project proposes a series of road improvement projects for the U.S. Highway 20 corridor in the counties of Woodbury, Ida and Sac. These improvements include the widening of the existing two-lane highway to a four-lane highway, the construction of new interchanges, realignment of cross streets, and highway bypasses.

The project corridor surveyed by this investigation encompasses an area of potential impact that follows U.S. 20 for approximately 52 miles. The corridor width varies and has a maximum extent of 1000 ft. beyond the current right-of-way. The original Phase I survey investigation surveyed a total area of 8270 acres.

Phase II investigations were conducted for each of the following archaeological sites and their findings are described as follows.

13IA31- This site represents a historic farmstead that was occupied from the early 20<sup>th</sup> to the mid-20<sup>th</sup> Century. This archaeological site was determined potentially eligible due to possibility that new information regarding historic farming and settlement in Woodbury County, Iowa, However, the additional archival research conducted for the site determined that no additional information could be obtained and the site was determined not eligible for the National Register and no further work was recommended for it.

13WD109- This historic archaeological site represents a farmstead that was occupied from 1902 and 1969. Due to the potential of this site contributing to a greater understanding of historic farming and settlement of Woodbury County, Iowa, a Phase IIA archival research investigation was recommended for it, however, like Site 13IA31, this site was determined not eligible for the National Register and no further work was recommended for it.

13WD130-This site was determined to represent a Late Woodland seasonal base camp. This site includes two shallow pit features, one of which appears to be shell-midden. The presence of possible pit features, intact soils, and a variety of artifact types suggest that this site has potential to contribute important new information about the prehistory of the Little Sioux River Valley and Woodbury County, Iowa. The Phase II investigation of archaeological site 13WD130 determined that the site *was eligible for the National Register* and recommended avoidance of the site, or mitigation / Phase III data recovery for this site if avoidance is not possible.

13WD132-This site represents Woodland and underdetermined prehistoric stratified campsite. The intact archaeological deposits, including a buried A horizon, have potential to contribute important new information about the prehistoric use of the Little Sioux River valley. Due to this, a Phase II investigation was recommended for Site 13WD132. The Phase II investigation of 13WD132 determined that the site was not eligible for the National Register and no further work was recommended for it.

13WD135- This site represents a Woodland Period open habitation site, which during the Phase I investigation one possible hearth was identified along with various prehistoric materials that included fire cracked rock. The Phase II investigation, however, determined that Site 13WD135 was not eligible for the National Register and no further work was recommended for it.

13WD136- This site represents a Woodland Period open habitation site that appears to be a large prehistoric campsite. Prehistoric artifacts were recovered during the Phase I investigation below the plow-zone, but no features were identified in the shovel tests. Due to the number of artifacts recovered, a Phase II investigation was recommended for this prehistoric site. The Phase II investigation of Site 13WD136, however, determined that this site was not eligible for the National Register and no further work was recommended for it.

Once finalized design plans are created, a determination of effect will submitted to your office for your review regarding any possible impacts to archaeological site 13WD130. If the site cannot be avoided, this office will begin to develop mitigation plans and efforts in coordination with the Iowa SHPO office.

If you concur with this findings these Phase II investigations, please sign the concurrence line below and return this letter to our office. If you have any questions regarding the findings and recommendations of these Phase II archaeological investigations, or the project in general, please feel free to contact me.

Sincerely,

*Matthew J. F. Donovan*

Matthew J.F. Donovan  
Office of Location and Environment  
Matt.Donovan@dot.iowa.gov

MJFD

Enclosure

cc: Tony Lazarowicz- District 3 Engineer  
Dee Ann Newell- OLE / NEPA  
Roger Larsen- OLE / Location  
Randy Withrow- Louis Berger & Associates.

Concur:

*Douglas W. Jones*  
SHPO Archaeologist

Date:

*3/25/2008*

*WE DID NOTE A NUMBER OF EDITORIAL ITEMS SUCH AS UNFINISHED SENTENCES,  
MISSING FIGURE REFERENCE (SEE PAGE 63) AND MISSPELLED WORDS THAT SHOULD  
BE CORRECTED THROUGHOUT THE TEXT.*

JUL 07 2008



# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097  
515-239-1726 FAX

July 2, 2008

Ref. No: NHS-20-1(77)- -19-97  
NHS-20-2(53)- -19-47  
NHS-20-2(54)- -19-47  
NHS-20-2(55)- -10-81  
Woodbury, Ida, and Sac  
Primary

Mr. Ralph Christian  
Review and Compliance  
Bureau of Historic Preservation  
State Historical Society of Iowa  
600 East Locust  
Des Moines, IA 50319-0290

R&C: 990300074

Dear Ralph:

**RE: Supplemental Phase I Architectural Survey for the Still Farmstead  
(Property 47-00133) U.S. Highway 20 between County Highway K42-  
West of Lawton and U.S. Highway 71 Early in Woodbury, Ida and Sac Counties, Iowa**

Enclosed for your review is the Supplemental Phase I architectural Survey for Everett and Doris Still farmstead in regards to the above-mentioned federal- funded project. As mentioned in previous correspondence, this federal funded project proposes a series of road improvement projects for the U.S. Highway 20 corridor in the counties of Woodbury, Ida and Sac. These improvements include the widening of the existing two-lane highway to a four-lane highway, the construction of new interchanges, realignment of cross streets, and highway bypasses.

The Everett and Doris Still Farmstead (Property 47-00133) includes a farm house (Property 47-00134), a barn (Property 47-00135), and various outbuildings. The house is an altered example of the gable front house type that lacks distinction. The barn is the common example of the broad roof hay feeder type barn. The farmstead was determined *not eligible* for the National Register and no further work was recommended for it.

Based on the findings of this investigation, the determination for this farmstead is ***No Historic Properties Affected***. If you concur with this determination, please sign the concurrence line below and return this letter. If you have any questions regarding this investigation, please feel free to contact me.

Sincerely,

Matthew J.F. Donovan  
Office of Location and Environment  
Matt.Donovan@dot.iowa.gov

MJFD  
Enclosure

cc: Rich Michaelis- District 3  
Dee Ann Newell- OLE / NEPA  
Roger Larsen- OLE / Location  
Camilla Deiber- Louis Berger / Architectural Historian

Concur

SHPO Historian

Date

Comments:



# Iowa Department of Transportation

JUL 08 2008

800 Lincoln Way, Ames, Iowa 50010

515-239-1097  
515-239-1726 FAX

July 3, 2008

Ref. No: NHS-20-1(77)-19-97  
Woodbury, Ida, and Sac  
Primary

Mr. Doug Jones  
Review and Compliance  
Bureau of Historic Preservation  
State Historical Society of Iowa  
600 East Locust  
Des Moines, IA 50319-0290

R&C: 990300074

Dear Doug:

**RE: Supplemental Phase I Archaeological Investigations for U.S. Highway 20  
Between County Highway K42-West of Lawton and U.S. Highway 71  
Early in Woodbury, Ida and Sac Counties, Iowa *No Historic Properties Affected***

Enclosed for your review and comment is the Supplemental Phase I Archaeological Investigation for a series of land parcels that had previously been denied access to during the original Phase I investigation for this above-mentioned federal-funded project. As mentioned in previous correspondence, this project proposes a series of road improvement projects for the U.S. Highway 20 corridor in the counties of Woodbury, Ida and Sac. These improvements include the widening of the existing two-lane highway to a four-lane highway, the construction of new interchanges, realignment of cross streets, and highway bypasses.

These supplemental archaeological investigations surveyed 113.2 acres. (Four parcels that were determined to need Phase I investigations.) These investigations were conducted using an extensive archival / records search, along with pedestrian surveys of the parcel areas. Subsurface testing was also conducted using shovel tests. During these investigations, one previously unrecorded historic archaeological site was examined and identified, Site 13IA25.

Site 13IA25 represents a historic Euro-American farmstead from the early to late 20<sup>th</sup> Century, that still contains a series of abandoned outbuildings, a barn, a garage, two modern grain bins, and two depressions on the surface of the site. The site area has been modernized and the area has been heavily disturbed. Due to this, Site 13IA25 has been determined not eligible for the National Register and no further work is recommended for it.

Based on the findings of this investigation, the determination for these parcels is *No Historical Properties Affected*. If you concur with this determination, please sign the concurrence line below and return this letter to our office. If you have any questions regarding the findings and recommendations of this investigation, please feel free to contact me.

Sincerely,

Matthew J.F. Donovan  
Office of Location and Environment  
Matt.Donovan@dot.iowa.gov

MJFD

Enclosure

cc: Rich Michaelis- District 3 Engineer  
Dee Ann Newell- OLE / NEPA  
Roger Larsen- OLE / Location  
Randy Withrow- Louis Berger & Associates.

Concur:

SHPO Archaeologist

Date:

**Appendix C**

---

**FHWA 4(f) Coordination**

**From:** Rold, Lisa [Lisa.Rold@fhwa.dot.gov]  
**Sent:** Tuesday, April 29, 2008 3:01 PM  
**To:** LaPietra, Mike; Vine, Janet [DOT]; Larsen, Roger [DOT]  
**Subject:** RE: US 20, Woodbury, Ida and Sac NHS-020-1(77)--19-97 - SHPO Concurrence  
FHWA concurs.

Lisa Rold, PE  
105 6th Street  
Ames, Iowa 50010-6337  
Phone: (515)233-7307  
e-mail: [lisa.rolld@fhwa.dot.gov](mailto:lisa.rolld@fhwa.dot.gov)  
fax: 515-233-7499

---

**From:** Vine, Janet [DOT] [mailto:Janet.Vine@dot.iowa.gov]  
**Sent:** Tuesday, April 29, 2008 8:42 AM  
**To:** Rold, Lisa  
**Cc:** LaPietra, Mike; Delivery-IA, Program; Larsen, Roger [DOT]  
**Subject:** FW: US 20, Woodbury, Ida and Sac NHS-020-1(77)--19-97 - SHPO Concurrence

Lisa,

We recently received SHPO's concurrence (attached) on the "no adverse effect" determination for the Van Houten house in Correctionville. Based on this, we plan to document this as a *de minimis* impact in the US 20 EA. Do you concur? Thanks,

Janet

---

**From:** Rold, Lisa [mailto:Lisa.Rold@fhwa.dot.gov]  
**Sent:** Thursday, March 13, 2008 4:38 PM  
**To:** Vine, Janet [DOT]  
**Cc:** LaPietra, Mike; Larsen, Roger [DOT]; Donovan, Matt [DOT]  
**Subject:** RE: US 20, Woodbury, Ida and Sac NHS-020-1(77)--19-97 - 4(f) Question

Janet  
This seem appropriate. FHWA Concur.

Lisa Rold, PE  
105 6th Street  
Ames, Iowa 50010-6337  
Phone: (515)233-7307  
e-mail: [lisa.rolld@fhwa.dot.gov](mailto:lisa.rolld@fhwa.dot.gov)  
fax: 515-233-7499

---

**From:** Vine, Janet [DOT] [mailto:Janet.Vine@dot.iowa.gov]  
**Sent:** Thursday, March 13, 2008 3:26 PM  
**To:** Rold, Lisa  
**Cc:** LaPietra, Mike; Larsen, Roger [DOT]; Donovan, Matt [DOT]  
**Subject:** RE: US 20, Woodbury, Ida and Sac NHS-020-1(77)--19-97 - 4(f) Question

Lisa,

Our preliminary design indicates that the through town alternative in Correctionville will not impact the Van Houten

house itself, but will require some of the property. Because of the condition of the house, our Cultural Resources folks believe that SHPO will concur with a "no adverse effect" determination for the use of the property. Assuming SHPO does concur, we would recommend that this is a *de minimis* 4(f) impact. Since the DOT is on such a tight schedule for completing NEPA on this project, I wanted to get an early read (not a commitment) from you on whether or not you'd concur with the *de minimis* impact. Feel free to call if you have questions. Thanks,

Janet

---

**From:** Rold, Lisa [mailto:Lisa.Rold@fhwa.dot.gov]  
**Sent:** Thursday, February 28, 2008 9:18 AM  
**To:** Vine, Janet [DOT]; LaPietra, Mike  
**Cc:** Larsen, Roger [DOT]  
**Subject:** RE: US 20, Woodbury, Ida and Sac NHS-020-1(77)--19-97 - Step 1, 4(f) Decision Process

Janet  
FHWA Concurs.

Lisa Rold, PE  
105 6th Street  
Ames, Iowa 50010-6337  
Phone: (515)233-7307  
e-mail: [lisa.rolld@fhwa.dot.gov](mailto:lisa.rolld@fhwa.dot.gov)  
fax: 515-233-7499

---

**From:** Vine, Janet [DOT] [mailto:Janet.Vine@dot.iowa.gov]  
**Sent:** Wednesday, February 06, 2008 11:53 AM  
**To:** LaPietra, Mike  
**Cc:** Rold, Lisa; Larsen, Roger [DOT]  
**Subject:** US 20, Woodbury, Ida and Sac NHS-020-1(77)--19-97 - Step 1, 4(f) Decision Process

Mike,

Attached are Step 1 memos of the 4(f) decision process for four sites in the project study area. A summary of each site is below. Do you concur with these findings?

#### HISTORIC PROPERTIES

VanHouton House: Step 1: Is it 4(f)? Yes

This property is located in Correctionville just east of the intersection of US 20 and IA route 31. It is a Queen Anne style house that is eligible for the National Register of Historic Places.

#### PARKS/RECREATION AREAS

Sioux Bend Wildlife Management Area: Step 1: Is it 4(f)? Yes

This property is located west of Correctionville and south of US 20. It is approximately 65.5 acres owned by the State of Iowa and managed by the Department of Natural Resources. It is open to the public and its primary uses are hunting, bird watching.

Walling River Access: Step 1: Is it 4(f)? Yes

The property is approximately 13 acres located north and east of Correctionville between of IA 31 and the Little Sioux River. It is owned by the Woodbury County Conservation Board and is open to the public. Its primary use is as a canoe access to the Little Sioux River. Secondary uses are hunting and bird watching.

Correctionville Golf Course: Step 1: Is it 4(f)? No

The golf course is located in Correctionville between US 20 and IA 31. It is a 9-hole course. It is privately owned but it is open to the public. A fee is charged to play golf on the course.

<<VanHouton House Step 1 Memo.doc>> <<Sioux Bend WMA Step 1 Memo.doc>> <<Walling River Access Step 1 Memo.doc>> <<Correctionville Golf Course Step 1 Memo.doc>> <<Sioux Bend and Walling Map.pdf>>  
<<NEPA404Cville.PDF>>

## **Appendix D**

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**Farmland Conversion - Form AD 1006**

# FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>		Date Of Land Evaluation Request 7/29/08			
Name Of Project US Route 20 Widening (Woodbury, Ida, Sac)		Federal Agency Involved FHWA/Iowa DOT			
Proposed Land Use Transportation		County And State Woodbury County, IA			
<b>PART II (To be completed by NRCS)</b>		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %			
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS			
<b>PART III (To be completed by Federal Agency)</b>		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		370.7			
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site		370.7	0.0	0.0	0.0
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value					
<b>PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)</b>		0	0	0	0
<b>PART VI (To be completed by Federal Agency)</b> Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use		15			
2. Perimeter In Nonurban Use		10			
3. Percent Of Site Being Farmed		20			
4. Protection Provided By State And Local Government		0			
5. Distance From Urban Builtup Area		0			
6. Distance To Urban Support Services		0			
7. Size Of Present Farm Unit Compared To Average		5			
8. Creation Of Nonfarmable Farmland		25			
9. Availability Of Farm Support Services		5			
10. On-Farm Investments		10			
11. Effects Of Conversion On Farm Support Services		25			
12. Compatibility With Existing Agricultural Use		0			
TOTAL SITE ASSESSMENT POINTS		160	115	0	0
<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)		100	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	115	0	0
TOTAL POINTS (Total of above 2 lines)		260	115	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>			

Reason For Selection:

# FARMLAND CONVERSION IMPACT RATING

<b>PART I</b> (To be completed by Federal Agency)		Date Of Land Evaluation Request	7/29/08
Name Of Project	US Route 20 Widening (Woodbury, Ida, Sac)	Federal Agency Involved	FHWA/Iowa DOT
Proposed Land Use	Transportation	County And State	Woodbury County, IA

<b>PART II</b> (To be completed by NRCS)		Date Request Received By NRCS	
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Acres Irrigated	Average Farm Size		
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS	

<b>PART III</b> (To be completed by Federal Agency)	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	370.7			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	370.7	0.0	0.0	0.0

<b>PART IV</b> (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				

<b>PART V</b> (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	0	0	0	0
--	---	---	---	---

<b>PART VI</b> (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use	15				
2. Perimeter In Nonurban Use	10				
3. Percent Of Site Being Farmed	20				
4. Protection Provided By State And Local Government	0				
5. Distance From Urban Builtup Area	0				
6. Distance To Urban Support Services	0				
7. Size Of Present Farm Unit Compared To Average	5				
8. Creation Of Nonfarmable Farmland	25				
9. Availability Of Farm Support Services	5				
10. On-Farm Investments	10				
11. Effects Of Conversion On Farm Support Services	25				
12. Compatibility With Existing Agricultural Use	0				
<b>TOTAL SITE ASSESSMENT POINTS</b>	160	115	0	0	0

<b>PART VII</b> (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	115	0	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>	260	115	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
----------------	-------------------	--

Reason For Selection:

# FARMLAND CONVERSION IMPACT RATING

<b>PART I</b> (To be completed by Federal Agency)		Date Of Land Evaluation Request 7/29/08			
Name Of Project US Route 20 Widening (Woodbury, Ida, Sac)		Federal Agency Involved FHWA/Iowa DOT			
Proposed Land Use Transportation		County And State Woodbury County, IA			
<b>PART II</b> (To be completed by NRCS)		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %			
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS			
<b>PART III</b> (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		370.7			
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site		370.7	0.0	0.0	0.0
<b>PART IV</b> (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value					
<b>PART V</b> (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		0	0	0	0
<b>PART VI</b> (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use		15			
2. Perimeter In Nonurban Use		10			
3. Percent Of Site Being Farmed		20			
4. Protection Provided By State And Local Government		0			
5. Distance From Urban Builtup Area		0			
6. Distance To Urban Support Services		0			
7. Size Of Present Farm Unit Compared To Average		5			
8. Creation Of Nonfarmable Farmland		25			
9. Availability Of Farm Support Services		5			
10. On-Farm Investments		10			
11. Effects Of Conversion On Farm Support Services		25			
12. Compatibility With Existing Agricultural Use		0			
<b>TOTAL SITE ASSESSMENT POINTS</b>		160	115	0	0
<b>PART VII</b> (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	115	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>		260	115	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Reason For Selection:					

(See Instructions on reverse side)

**Appendix E**

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**Written Responses to Early Coordination Efforts  
(2000/2007)**

2000



U.S. Department of Housing and Urban Development  
Nebraska State Office  
Executive Tower Centre  
10909 Mill Valley Road  
Omaha, Nebraska 68154-3955

October 25, 2000

MEMORANDUM FOR: To Whom It May Concern

FROM:  Gregory A. Bevirt, Director, Community Planning  
and Development Division

SUBJECT: Draft Environmental Assessment/Draft Environmental  
Impact Statement

As this Office no longer has the staff expertise to review the attached document, we are returning it to you without comment. We regret any inconvenience this might cause.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
901 NORTH 5TH STREET  
KANSAS CITY, KANSAS 66101

OCT 31 2000

Jeffrey B. Frantz, Project Manager  
CH2MHILL  
8501 W. Higgins Road, Suite 300  
Chicago, IL 60631-2801

Dear Mr. Frantz,

RE: US Route 20, Woodbury/Sac/Ida Counties and  
US Route 30, Benton/Tama Counties

We have received your October 17 and 18, 2000, letters in which you request information regarding the environmental impact of proposed construction. Your request has been referred to Mr. Joe Cothem, of our National Environmental Policy Act (NEPA) office, for a response. If you have any questions, you can reach Mr. Cothem at (913) 551-7148. Please refer all future requests for information of this nature directly to the Region 7 NEPA group.

Sincerely,

A handwritten signature in cursive script that reads "Harriett L. Jones".

Harriett L. Jones, P.E.  
RCRA Enforcement and State Programs Branch  
Air, RCRA, and Toxics Division

Enclosures

cc: Mary Kay Rogge, Iowa Department of Transportation (with enclosures)

# CH2MHILL TELEPHONE CONVERSATION RECORD

Call To: Jeff Frantz

Phone No.:

Date: November 06, 2000

Call From: Randy Kraciun  
Rock Island District,  
Corps of Engineers

Time: 11:14 AM

Message

Taken By: Jeffrey B. Frantz

Subject: IaDOT projects in western Iowa

Randy Kraciun from the Rock Island District, Corps of Engineers (tel. 309/794-5174) called to inform me that he is currently working on responses to the early coordination letters we sent to his agency on behalf of the IaDOT. Two of the projects we submitted for coordination, IA 988 and US 20, are also located within the boundaries of the Omaha District's Civil Works program. These two projects will be reviewed by the Rock Island District for regulatory issues and by the Omaha District for coordination with other potential Corps projects.

The Rock Island District has forwarded our letters to the Omaha District. We should expect responses from both offices in the near future. For future reference, the Omaha District's contact for civil works projects is:

Omaha District  
US Army Corps of Engineers  
Environmental and Economics Section  
215 North 17<sup>th</sup> Street  
Omaha, Nebraska 68102-4978

Attn: Candice M. Gorton

cc: Larry Martin  
Libby Braband

# STATE HISTORICAL SOCIETY OF IOWA

*Where past meets future*

November 6, 2000

In reply refer to:  
R&C#: 990300074

Jeffrey B. Frantz, Project Manager  
CH2M Hill  
8501 W. Higgins Road  
Suite 300  
Chicago, Illinois 60631-2801

American Gothic House  
Eldon

Blood Run NHL  
Larchwood

Centennial Building  
Iowa City

Matthew Edel Blacksmith Shop  
Marshalltown

Abbie Gardner Cabin  
Arnolds Park

Iowa Historical Building  
Des Moines

Montauk Governor's Home  
Union Sunday School  
Clermont Museum  
Clermont

Plum Grove Governor's Home  
Iowa City

Toolshoro Indian Mounds  
Toolshoro

Western Historic Trails Center  
Council Bluffs

RE: FHWA – SAC, IDA, & WOODBURY COUNTIES – NHS-20-1(77)—19-57 – NHS-20-2(53)—19-47 – NHS-20-2(54)—19-47 – NHS-20-2(55)—19-81 – US HWY 20, 45 MILES OF 4 LANE RECONSTRUCTION ALONG EXISTING ROUTE – ADDITIONAL CORRESPONDENCE

Dear Mr. Frantz,

Thank you for notifying our office about the above referenced proposed project. We understand that this project will be a federal undertaking and will need to comply with Section 106 of the National Historic Preservation Act. We look forward to consulting with you, the Iowa Department of Transportation, and the Federal Highway Administration on the Area of Potential Effect for this proposed project and whether this project will affect any significant historic properties under 36 CFR Part 800.4. We will need the following types of information for our review:

- The Area of Potential Effect (APE) for this project needs to be adequately defined (36 CFR Part 800.16 (d)).
- Information on what types of cultural resources are or may be located in the APE (36 CFR Part 800.4).
- The significance of the historic properties in the APE in consideration of the National Register of Historic Places Criteria.
- A determination from the responsible federal agency of the undertaking's effects on historical properties within the APE (36 CFR Part 800.5).

If your agency will be the primary contact for this project, the responsible federal agency which we presume is the Federal Highway Administration, needs to notify us that they have authorized you to consult with our office on this project in accordance with 36 CFR Part 800.2(c)(5). Also, the responsible federal agency will need to identify and contact all potential consulting parties that may have an interest in historic properties within the project APE (36 CFR 36 Part 800.2 (c)).

Please reference the Review and Compliance Number provided above in all future submitted correspondence to our office for this project. We look forward to further consulting with you and the Federal Aviation Administration on this project. Should you have any questions please contact me at the number below.

Sincerely,



Douglas W. Jones, Archaeologist  
Community Programs Bureau  
(515) 281-4358

cc: Gerald Kennedy, FHWA  
Steve Larson, NEPA Coordinator, IDOT, Ames  
Randall Faber, Office of Environmental Services, IDOT, Ames

IOWA HISTORICAL BUILDING

600 East Locust • Des Moines, Iowa 50319-0290  
Phone: (515) 281-6412 • Fax: (515) 242-6498 or (515) 282-0502  
[www.uiowa.edu/~shsi/index.htm](http://www.uiowa.edu/~shsi/index.htm)

# CITY OF CORRECTIONVILLE

312 DRIFTWOOD  
P.O. BOX 46  
CORRECTIONVILLE, IOWA 51016  
PHONE: (712) 372-4791  
FAX: (712) 372-4489

Council Members	Term
Kim Mebius	2001
Richard Enockson	2001
Sonya Kustan	2003
Lila Byers	2003
Thomas Henriksen	2003

November 7, 2000

CHEM HILL  
3501 W. Higgins Road  
Suite 300  
Chicago, IL 60631-2801

Dear Jeff:

It is my opinion that the bypass must go around to the north of Correctionville for the following reasons:

Correctionville has a proposed walking, biking path under early stages of planning, running from the southerly edge of the city limits for approximately one mile south along the Little Sioux River to the Little Sioux County Park. This project has been in development for about two years with state funding anticipated by the Spring of 2001. The City and County have gone to great lengths to see this project through and we certainly do not want or need a four lane highway cutting it in half.

From the drawings I have seen, the length of the North route is much shorter and also the environmental impact is much less. The southern route would greatly affect the natural beauty of the valley with the elimination of many trees.

The economic affect on the southerly route would devastate all businesses of Correctionville. With the southern route, most traffic would drive on by and never stop for any reason. Where as the northern route, being on the towns north city limit, there would still be a chance of development and much less impact on the city's economy.

We have also just spent 1.2 million dollars on a new sewer system south and east of the city and our lift station is directly south of the city. We would hate to have to move the lift station and the force main to the new lagoons with the placement of a 4 lane highway over or on top of them.

I know of no hazardous waste sites on either route.

On behalf of the mayor and the City Council I urge you to propose the north bypass.

  
DON DIXON, Mayor

ATTEST

  
BARBARA JOY, City Clerk  
City of Correctionville



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

210 Walnut Street  
693 Federal Building  
Des Moines, IA 50309-2180

November 16, 2000

Ref: NHS-20-1(77)—19-97  
NHS-20-2(53)—19-47  
NHS-20-2(54)—19-47  
NHS-20-2(55)—19-81

Mr. Jeffrey Frantz  
Project Manager  
CH2M Hill  
8501 West Higgins Road, Suite 300  
Chicago, Illinois 60631-2801

Dear Mr. Frantz:

I have reviewed the CH2M Hill proposed construction work plan you submitted for the Iowa Department of Transportation. Based on the description of the proposed construction activities, description of work being considered, and that you will be submitting Form 1006 to the Natural Resources Conservation Service (NRCS) district conservationists, the NRCS has no additional comments on this project at this time.

If you have any site specific questions, feel free to contact the local NRCS offices listed below.

Lorne B. Miller  
District Conservationist  
5973 State Highway 175  
Post Office Box 237  
Ida Grove, Iowa 51445-0237  
(712) 364-2124

Neil A. Stockfleth  
District Conservationist  
206 1<sup>st</sup> Street  
Post Office Box 725  
Sergeant Bluff, Iowa 51054-0725  
(712) 943-6727

Lane L. Collins  
District Conservationist  
624 East Park Avenue  
Post Office Box 276  
Sac City, Iowa 50583-0276  
(712) 662-7773

Sincerely,

Leroy Brown  
State Conservationist



# SAC COUNTY CONSERVATION BOARD

2970 280th Street

Sac City, Iowa 50583

Mr. Jeffrey B. Frantz  
CH2M Hill  
8501 W. Higgins Road  
Suite 300  
Chicago, IL 60631-2801

November 20, 2000

Dear Mr. Frantz:

This letter is in response to a letter you wrote dated October 18, 2000 to Jill Von Ahn, board member for the Sac County Conservation Board. The letter, regarding possible US Route 20 wetland mitigation sites, was misplaced and I just now have received it.

In response to your request, I have identified one potential mitigation site that is located 3-4 miles southeast of Early, Iowa ( see enclosed map). The Sac County Conservation Board would be interested in management of any areas that are a result of US Route 20 mitigation.

I apologize for the late timing of this letter and should you have any questions feel free to contact me at the above address, at (712) 662-4530 or by e-mail at [saccocon@pioneer.net](mailto:saccocon@pioneer.net).

Sincerely,

A handwritten signature in cursive script that reads "Chris T. Bass".

Chris T. Bass  
Executive Director

Enclosures





THOMAS J. VILSACK, GOVERNOR  
SALLY J. PEDERSON, LT. GOVERNOR

LYLE W. ASELL, INTERIM DIRECTOR

November 27, 2000

Mr. Jeffrey B. Frantz  
CH2M Hill  
8501 W. Higgins Road, Suite 300  
Chicago, IL 60631-2801

RE: *Improvement of US Route 20 in Woodbury, Ida and Sac Counties*

Dear Mr. Frantz:

*Thank you for inviting our comments on the impact of the above referenced project on protected species and rare natural communities.*

*Surveys will have to be conducted of any loess hills prairies for the plains pocket mouse (*Perognathus flavens*, endangered species) and for any threatened or endangered plants. We will also need to know if there are any natural areas that would be disturbed. It is noted that this proposed project may impact the north side of the Sioux Bend Wildlife Area in Woodbury County. We would also like to know if this project would impact Kiowa Marsh.*

*It is requested that you obtain DNR fisheries input if deep water barrow pits result from construction.*

*This letter is a record of review for protected species and rare natural communities in the project area. It does not constitute a permit and before proceeding with the project, you may need to obtain permits from the DNR or other state and federal agencies.*

*If you have any questions about this letter or if you require further information, please contact Keith Dohrmann at (515) 281-8967.*

Sincerely,

STEVE PENNINGTON  
IOWA DEPARTMENT OF NATURAL RESOURCES

SP:kd  
00-703L.doc



IN REPLY REFER  
TO:

FWS/RIFO

## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Ecological Services  
Rock Island Field Office  
4469 48th Avenue Court  
Rock Island, Illinois 61201  
Tel: 309/793-5800 Fax: 309/793-5804

November 28, 2000

Mr. Jeffrey B. Frantz  
CH2M Hill  
8501 West Higgins Road  
Suite 300  
Chicago, Illinois 60631-2801

Dear Mr. Frantz:

This responds to your letter of October 18, 2000, requesting technical assistance for the environmental assessment regarding the presence of federally listed endangered species within the project area of the proposed U.S. Route 20 expansion to a four-lane facility in Woodbury County, Iowa.

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed action. Therefore, we are furnishing you the following list of species which may be present in the concerned area:

<u>Classification</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Habitat</u>
Threatened	Bald eagle	<i>Haliaeetus leucocephalus</i>	Wintering
Endangered	Least Tern	<i>Sterna antillarum</i>	Bare alluvial and dredged spoil islands; sand/gravel areas around fly ash ponds
Threatened	Piping Plover	<i>Charadrius melodus</i>	Bare alluvial and dredged spoil islands; sand/gravel areas around fly ash ponds

The threatened bald eagle (*Haliaeetus leucocephalus*) is listed as wintering along large rivers, lakes, and reservoirs in Woodbury County, Iowa. During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power

plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch in large shoreline trees to rest or feed on fish. There is no critical habitat designated for this species. The eagle may not be harassed, harmed, or disturbed when present nor may nest trees be cleared.

The least tern (*Sterna antillarum*) is listed as endangered in Pottawattamie and Woodbury Counties, Iowa (along the Missouri River). It nests on bare alluvial or dredged spoil islands and sand/gravel bars in or adjacent to rivers, lakes, gravel pits and cooling ponds. It nests in colonies with other least terns and sometimes with the piping plover. There is no critical habitat designated for this species. It must not be harmed, harassed or disturbed when present.

The piping plover (*Charadrius melodus*) is listed as threatened in Iowa where it nests on sandy beaches, bare alluvial and dredged spoil islands adjacent to rivers, streams, lakes and gravel pits. It nests in colonies with other piping plovers and sometimes with least terns. Potential habitat can be found along the Missouri River in Woodbury County. No critical habitat has been designated. The birds must not be harmed, harassed or disturbed when present.

The Corps of Engineers is the Federal agency responsible for wetland determinations, and we recommend that you contact them for assistance in delineating any wetland types and acreages within the project boundary. Priority consideration should be given to avoid impacts to any wetland areas. Any future activities in the study area that would alter wetlands may require a Section 404 permit. Unavoidable impacts will require a mitigation plan to compensate for any losses of wetland functions and values. The U.S. Army Corps of Engineers, Clock Tower Building, P.O. Box 2004, Rock Island, Illinois, 61204-2004, should be contacted for information about the permit process.

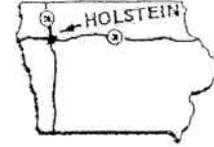
These comments provide technical assistance only and do not constitute the report of the Secretary of the Interior on the project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under Section 7 of the Endangered Species Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement.

Thank you for the opportunity to provide comments early in the planning process. If you have any additional questions or concerns, please contact Heidi Woeber of my staff.

Sincerely,



Richard C. Nelson  
Supervisor



December 4, 2000

Jeffrey B. Frantz, Project Manager  
CH2M Hill  
8501 W. Higgins Road, Suite 300  
Chicago, Illinois 60631-2801

Mr. Mark Johnson  
District Transportation Planner  
Iowa Department of Transportation  
District 3 Office  
2800 Gordon Drive  
Sioux City, Iowa 51102

Mr. Jim Rost  
Iowa Department of Transportation  
Office of Environmental Services  
800 Lincoln Way  
Ames, Iowa 50010

Roger Larson  
Office of Project Planning  
Iowa Dept. of Transportation  
800 Lincoln Way  
Ames, Iowa 50010-9902

Re: Planning and Design for Hwy. 20 Improvements

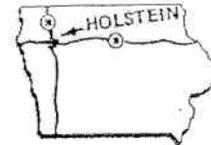
Mr. Frantz, Mr. Johnson, Mr. Rost, Mr. Larson:

I'm writing on behalf of the City Council of the City of Holstein. We have been asked to provide comment about the proposed improvements to Hwy. 20 as follows:

In response to the letter from CH2M Hill we want to let you know that there are two city water wells located on the north side of the current Hwy. 20 in the area of the Maple River about 5 miles east of Holstein. These wells will need to be taken into consideration. There is also a water pipeline lying about 15 ft. south of the fence line on the north side of Hwy. 20 going west to the first gravel road before it turns to the northwest. In addition, there are two additional city water wells on the south side of Hwy. 20 in the area close to the Maple River, which may not be in contention for the development of Hwy. 20, however the water pipeline going from these two wells crosses under the current Hwy. 20 to join with the two

*City of Holstein*

119 So. Main St., P.O. Box 500, Holstein, IA 51025-0500  
TEL: (712) 368-4898 • FAX: (712) 368-2782  
E-MAIL: holstein@pionet.net



water wells on the north side. All of these water utilities need to be taken into consideration in the design of the new road. In the area just south of the City of Holstein there is a major wastewater main going under the current four lanes on Hwy. 20 and this line will come into consideration with the development of an off ramp to the city. There are also tile lines lying next to the creek running on the south side of Holstein. Finally, the only other environmental concern would be the remnants of an old gas station lying on state right of way on the south side of the west junction of Hwy. 20 and Hwy. 59. The status of this site is unknown, but would come under consideration in the development of the junction.

To address the design considerations for the improvements to Hwy. 20 in the Holstein area we would make the following comments:

The Holstein City Council addressed the design considerations at their council meeting on December 4, 2000, however, declined to identify any specific design considerations at this time. The council would like to meet with the DOT planning team in the future and discuss the interchange situation on Hwy. 20 in the Holstein area. Since the purchase of right of way will no doubt come into the design process, the city council feels they do not want to suggest design options that could unduly upset affected property owners until more concrete planning is completed and more public comment is received.

The City Council of the City of Holstein wants to work hand in hand with the Department of Transportation in the years ahead to move this project forward. We do ask that the time frame set a year ago be continued to complete this project by the end of the decade as proposed. This project has been in discussion for over 40 years and now is the time to bring it to conclusion. The economic development opportunities for northwest Iowa and for the City of Holstein will be greatly enhanced with this highway improvement. The City of Holstein may have considerable expansion to the south of the community with the completion of the four lane highway across the State of Iowa. We look forward to this development and the progressive growth of the community in the future.

For the Council,

Mary Gross, Mayor

cc: C-File  
Hwy. 20 Corridor Assn.  
Holstein Development Authority

*City of Holstein*

119 So. Main St., P.O. Box 500, Holstein, IA 51025-0500  
TEL: (712) 368-4898 • FAX: (712) 368-2782  
E-MAIL: holstein@pionet.net



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS  
CLOCK TOWER BUILDING - P.O. BOX 2004  
ROCK ISLAND, ILLINOIS 61204-2004

December 6, 2000

Planning, Programs, and  
Project Management Division

Mr. Jeffrey B. Frantz  
Project Manager  
CH2MHill  
8501 W. Higgins Road, Suite 300  
Chicago, Illinois 60631-2801

Dear Mr. Frantz:

I received your letter dated October 18, 2000, concerning improvement to US Route 20 in Woodbury, Ida and Sac Counties, Iowa. Rock Island District staff reviewed the information you provided and have the following comments:

a. The lands involved are outside the geographic (Civil Works) boundaries of the Rock Island District. You must coordinate with the Omaha District to determine if your project involves any Corps of Engineers (Corps) administered lands. The address is as follows:

District Engineer  
U.S. Army Engineer District, Omaha  
215 North 17th Street  
Omaha, Nebraska 68102-4978

b. Any proposed placement of fill or dredged material into waters of the United States (including wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. It appears that a Section 404 permit will be required for this project. When detailed information is available, please complete and submit the enclosed application packet to the Rock Island District for processing (Enclosure). The application should include determinations of wetlands and other waters of the United States, size estimations of impacts to those areas, and wetland types and relative functions.

Prior to completing the permit review process and in compliance with the Clean Water Act Section 404(b)(1) guidelines, we may also require sequential mitigation involving an alternatives analysis, minimization of impacts, and compensatory mitigation for any unavoidable impacts. Alternatives analyses must demonstrate how you will avoid impacts by selecting the least environmentally damaging practicable alternative based on wetland sizes, locations, types,

and relative functions. Minimization of impacts should consist of a list of appropriate and practicable steps to minimize unavoidable adverse impacts. Compensatory mitigation must include plans to restore or create wetlands to mitigate unavoidable project wetland impacts. If you have any questions regarding permitting requirements under Section 404 of the Clean Water Act, please contact Mr. Neal Johnson of our Regulatory Branch. You may reach Mr. Johnson by writing to our address above, ATTN: Regulatory Branch (Neal Johnson), or by telephoning 309/794-5379.

c. The Responsible Federal Agency should coordinate with the Iowa State Historic Preservation Officer, Capitol Complex, Des Moines, Iowa 50319 to determine impacts to historic properties.

d. The Rock Island Field Office of the U.S. Fish and Wildlife Service should be contacted to determine if any federally listed endangered species are being impacted and, if so, how to avoid or minimize impacts. The Rock Island Field Office address is: 4469 - 48th Avenue Court, Rock Island, Illinois 61201. Mr. Rick Nelson is the Field Supervisor. You can reach him by calling 309/793-5800.

No other concerns surfaced during our review. Thank you for the opportunity to comment on your proposal. If you need more information, please call Mr. Randy Kraciun of our Environmental Analysis Section, telephone 309/794-5174.

You may find additional information about the Corps Rock Island District on our web site at <http://www.mvr.usace.army.mil>. To find out about other Districts within the Corps, you may visit web site: <http://www.usace.army.mil/where.html#Divisions>. (Please note, this address may have changed since our last letter.)

Sincerely,



Kenneth A. Barr  
Chief, Economic and Environmental  
Analysis Branch

Enclosure

# CH2MHILL TELEPHONE CONVERSATION RECORD

Call To: Jeff Frantz

Phone No.:

Date: January 26, 2001

Call From: Kathleen Moench, Iowa DNR Time:

Message

Taken By: Jeffrey B. Frantz

Subject: US 30, US 20, IA 1, US 69, and IA 988

Kathleen Moench, Iowa Department of Natural Resources, telephoned in response to a October 31, 2000, letter from CH2M HILL to her requesting information on potential 6(f) properties adjacent to projects in Iowa. We had requested that she screen US Route 30, US Route 20, IA Route 1, US Route 69, and IA Route 988.

Ms. Moench stated that she had searched their database, and with the exception of anything that might be recognized during coordination with the National Park Service in Omaha, Nebraska, she was not able to find any 6(f) properties near any of the projects.

cc: Larry Martin  
Libby Braband

2007

---

**From:** todd.madison@faa.gov  
**Sent:** Monday, April 02, 2007 10:44 AM  
**To:** Vine, Janet [DOT]  
**Cc:** Thede, Kay [DOT]  
**Subject:** Iowa DOT U.S. 20 Improvements

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Ms. Janet M. Vine,

The FAA (Federal Aviation Administration) reviews other federal Agency environmental documents from the perspective of the FAA's area of responsibility; that is, whether the proposal will have affects on aviation and other FAA responsibilities. We generally do not provide comments from an environmental standpoint. Therefore, we have reviewed the material furnished with your letter dated March 22, 2007, concerning the proposed U.S. 20 improvements in Woodbury, Ida, and Sac Counties from 1/2 mile west of the City of Lawton, easterly approximately 55 miles to the north U.S. 20 junction with U.S. 71, and have no comments regarding environmental matters.

However, we remind you that you will need to consider whether or not the project will require formal notice and review from an airspace standpoint. The requirements for this notice may be found in Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace. This regulation is contained under Subchapter E, Airspace of Title 14 of the Code of Federal Regulations. We would like to remind you that if any part of the project exceeds notification criteria under FAR Part 77, notice should be filed at least 30 days prior to the proposed construction date. Questions concerning this matter should be directed to Ms. Brenda Mumper at (816) 329-2524.

Please let me know if you have any questions,

Todd M. Madison, P.E.  
Environmental Specialist  
FAA Central Region Airports Division, ACE-611F  
901 Locust  
Kansas City, Missouri 64106-2325  
Tel: (816) 329-2640  
Fax: (816) 329-2611  
email: todd.madison@faa.gov  
web:  
[http://www.faa.gov/airports\\_airtraffic/airports/regional\\_guidance/central/](http://www.faa.gov/airports_airtraffic/airports/regional_guidance/central/)

**From:** Cothern.Joe@epamail.epa.gov  
**Sent:** Friday, April 13, 2007 2:32 PM  
**To:** Vine, Janet [DOT]  
**Subject:** I-20 Improvements (Woodbury, Ida and Sac Counties, Iowa)

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

**Attachments:** pic11124.gif; pic12317.gif; pic04213.gif; pic27109.gif; pic24028.gif; pic29200.gif; pic21080.gif; pic21318.gif; pic16858.gif



pic11124.gif



pic12317.gif



pic04213.gif



pic27109.gif



pic24028.gif



pic29200.gif



pic21080.gif



pic21318.gif



pic16858.gif

Dear Ms. Vine,

Thank you for updating EPA on the status of this proposed improvement project. The GIS outputs below identify environmentally regulated activities within the project area that are in EPA's databases. Closer resolution is available if needed.

I can be of assistance with any environmental matter identified by IDOT, or other reviewing agencies, please contact me.

Sincerely,

Joseph E. Cothern  
NEPA Team Leader  
U.S. Environmental Protection Agency  
Region 7 - Kansas City  
(913) 551-7148  
cothern.joe@epa.gov

Lawton & Merville. IA

Embedded image moved to file: pic11124.gif

pic12317.gif

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RECEIVED

APR 20 2007

April 17, 2007

OFFICE OF LOCATION & ENVIRONMENT

Janet M. Vine  
Iowa Department of Transportation  
Office of Location and Environment  
800 Lincoln Way  
Ames, Iowa 50010

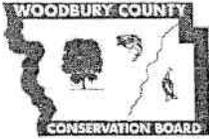
Dear Ms. Vine,

In regards to your letter of 22 March 2007 and as a representative of the Sac County Soil and Water Commissioner, we whole heartedly support the expansion of U.S. 20 to a four lane road. The only environmental drawback would be taking additional prime agricultural land out of crop production into road usages. We believe the good by far outweighs the bad.

Sincerely,



Roger Buehler



Woodbury County Conservation Board  
4500 Sioux River Road Sioux City, IA 51109-1657

Phone: 712/258-0838  
Fax: 712/258-1261

Board Members:  
Frank Gray  
Greg Grupp  
Don Dixon  
Mark Taylor, D.O.  
Christine Zellmer-Zant

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Rick D. Schneider, Director  
Dawn Chapman, Naturalist  
Theresa Kruid, Naturalist  
Mark Peterson, Operations Supt.

OFFICE OF LOCATION & ENVIRONMENT

April 18, 2007

Janet M. Vine  
Office of Location and Environment  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

Re: U. S. Highway 20 Improvements

Dear Ms. Vine:

Woodbury County Conservation Board would like to offer the following comments regarding the proposed improvements to U. S. Highway 20 in Woodbury County:

- We would recommend that the second (new) set of two lanes be located on the south side of the existing two lanes in Woodbury County, at least between Merville and Correctionville
- We prefer any Correctionville bypass be located around the north side of the city due to park lands and a newly paved recreational trail to the south of the city
- We recommend that ecotype native prairie species be used to reseed newly constructed slopes and medians on the entire project
- We recommend that IDOT incorporate a recreational trail in the project design within the IDOT right-of-way
- We are willing to work with IDOT on potential mitigation sites in our county

Thank you for this opportunity to provide comment. Please contact me if you have any questions.

Sincerely,

Rick D. Schneider, Director  
Woodbury County Conservation Board

*"Conservation is everybody's business"*

**Appendix F**

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**NEPA/404 Concurrence Meeting Minutes**

## NEPA/404 Concurrence Meeting - January 30, 2008

**ATTENDEES:**

FROM: CH2M HILL  
DATE: February 12, 2008

**Attendees:**

Iowa DOT: Scott Marler, Colin Greenan, Roger Larson, Janet Vine, Shelby Ebel, Randy Hyler, Angela Poole  
Iowa DNR: Chris Schwake  
US FWS: Joe Slater  
US ACE: Neal Johnson  
FHWA: Mike LaPietra  
CH2MHill: Jeff Frantz, Libby Braband

**Project Overview**

Colin began with an overview of the project. He defined the study limits which extend from Merville to Early. The corridor width is 500' north and south of the existing alignment, except near Correctionville. He discussed the field surveys completed to date, and noted that the field studies also considered potential borrow areas that were outside the 1000' corridor.

Field based wetland determinations identified mainly palustrine emergent or palustrine unconsolidated bottom. Colin noted the presence of some farmed wetlands in the corridor.

Colin summarized the surface water resources which includes 54,526' of primary and secondary stream resources as well as several unnamed tributaries to these surface waters. He identified as significant floodplain associated with the Little Sioux River near Correctionville.

Colin summarized wildlife resources and indicated that there are no known Federal or State species. While based on initial reconnaissance level surveys, appropriate habitat is not believed to be present, additional coordination is planned to evaluate the potential for the bald eagle, Blanding's Turtle, and spotted skunk in the corridor. Mussel and fish surveys scheduled for spring.

Colin summarized habitat in the study area. No natural prairies occur, and the limited upland woodlands and wooded riparian areas are found along the aforementioned surface waters. More substantial wooded areas are found mainly along the bluff of the Little Sioux River.

Three recreational sites have been identified as potential 4(f) resources: Correctionville Golf Course, Sioux Bend Wildlife Management Area, and the Walling River Access (Woodbury County Conservation Site).

A summary of Cultural Resource studies was provided. Phase I studies are complete for all but 6 sites (where access was denied). The consultant now has permission to access 5 of the 6 sites. Several sites were identified for Phase II studies, and those sites have now been initiated.

The summary of regulated materials identified some wells and above ground storage tanks, associated primarily with agricultural practices. No special measures are expected.

Colin noted two features when summarizing the study area:

- While the project is outside the area identified as Indiana Bat habitat, the project would aim to protect woodlands.
- At the Walling Canoe Access there is an area of planted prairie of which to be aware

Colin walked through the study area using the aerial images to identify the locations of the resources described above.

### **Agency Coordination and Public Involvement**

Janet provided an overview of agency coordination and public involvement. Early coordination letters were initially sent in 2000, however since the project was put on hold for several years, follow-up letters were sent to agencies in 2007.

In June 2007 two concurrent public meetings were held in Holstein and Correctionville. The public was largely supportive of the project. There were concerns raised regarding traffic volumes and safety on the existing roadway.

### **Concurrence Point 1: Purpose and Need**

Janet provided summary of the purpose and need. The purpose and need for the project focused on route/network continuity, consistency with planned development and long-range planning, and the condition of the roadway. Scott asked for concurrence on Purpose and Need. *All agencies concurred.*

### **Concurrence Point 2: Alternatives to be Analyzed**

Roger discussed the Alternatives to be Analyzed. He presented two alternatives: the No Action and 4-Lane improvement.

Project build alternative has been divided into four segments:

- Segment 1 – West Project Terminus to approximately 1-mile west of Correctionville
- Segment 2 – 1-mile west of Correctionville to 1-mile east of Correctionville
- Segment 3 – 1-mile east of Correctionville to the existing 4-lane near Holstein
- Segment 4 – End of 4-lane segment near Holstein to east project terminus

In Segment 1 two alternatives remain under consideration. Alternative A would widen to the north side and Alternative B would widen to the south side of existing U.S. 20. This

segment would require complete reconstruction due to the terrain and vertical alignment. Roger summarized potential impacts for these alternatives.

Segment 2 - Alternative A would widen U.S. 20 to both sides through Correctionville. Alternative B is a northern bypass of the community. Roger summarized potential impacts in this segment. Alternative A (through town) may impact an historic house.

Segment 3 - Only one alternative, widening to the south, is being considered in this segment. Widening to north had many more displacements and environmental impacts. Roger discussed side road relocations required in Segment 3.

Neal - can you use the existing road bed through here?

Roger - We can use more of the existing roadbed in Section 3 due to the flatter terrain.

Neal - Will all widening be next to existing lanes or can you reuse the existing lanes?

Roger - In most cases, yes, we can reuse them. IDOT would try to hold the ROW line, but some additional ROW may be required due to the vertical alignment, and new design standards on foreslope and backslope prevent reconstruction directly on top of existing, but old roadbed will be incorporated into new.

Segment 4 - Only one alternative, widening to the north, is being considered in this segment. Widening to south had many more displacements and environmental impacts.

Neal - Can you point out the channel relocations?

Colin referred back to figures 3, 4, 5 and 6 and discussed the area in Segment 1. Two alternatives were developed to minimize channel impacts.

Neal - Going north required less channel relocation, right?

Colin - Yes, it appears so.

Scott asked for concurrence on Alternatives to be Analyzed. *All agencies concurred.*

### Concurrence Point 3: Alternatives to be Carried Forward

Neal - Isn't there work to do between points 2 and 3?

Scott - Usually we collect field data between 2 and 3, but we've already been doing that. We didn't want to waste agencies' time.

Neal - Do we know enough about wetlands? Do we know species and quality issues?

Colin - We know quite a bit about species.

Scott - We don't do delineations at this stage. The Merger agreement does not specify delineations.

Neal - Determinations are only estimates. Before we get too far along, we ought to know more about what we're dealing with. We're probably okay.

Scott - We've collected the data we'll use for the EA.

Roger discussed Concurrence Point 3. The Iowa DOT is proposing carrying forward all of the alternatives presented in Concurrence Point 2.

Joe (FWS) - Can you jump back and forth (N & S) with widening to minimize impacts?

Roger - We can, but it is somewhat difficult. It adds curves and makes stage construction harder and more difficult.

Joe - Understanding why we can or can't do that (jump back and forth) will help down the road.

Colin - Are you looking for a third alternative?

Joe - Not necessarily.

Colin - We've discussed crossing over internally, but it has some safety problems, as well as additional costs.

Roger - It's pretty hard to completely avoid all of the resources.

Scott-what do you want us to look at?

Joe - It seems like you done the work, but you need to document it.

Discussion determined that the Iowa DOT should add a discussion about the issues associated with the cross-over - as well as the fact that the cross-overs would not actually eliminate the impacts -- in the EA (see attached discussion of crossover titled "Attempt to minimize impacts between Minnesota Ave. and Mason Ave.").

Neal - Since you're carrying all alternatives through Point 3, we can agree on Point 3. *All agencies concurred.*

The Iowa DOT adjourned the meeting.

## **Attempt to minimize impacts between Minnesota Ave. and Mason Ave.**

At the January 30, 2008 NEPA/404 Concurrence Point Meeting the IA DOT presented two alternatives for the western 11 miles of the US 20 Woodbury/Ida/Sac project. Alternative A involves reconstructing the 2-lanes into 4-lanes with the widening to the south side. Alternative B involves reconstructing the 2-lanes into 4-lanes with the widening to the north side. As a result, the Fish and Wildlife Service's (FWS) asked if the IA DOT could do more to minimize impacts to the water resources between Minnesota Ave and Mason Ave.

The IA DOT Location Section has examined the feasibility of constructing a crossover that would attempt to 'thread the needle' between the tributary channel on the south side of US 20 and the same channel and associated wetlands area on the north side of US 20 as requested by FWS. This would entail transitioning US 20 from the north side to the south side at approximately the same point that the channel meanders under the highway from the south to the north side.

The IA DOT road design standards were used to ensure that the crossover would meet the IA DOT's design criteria. However, it does create an undesirable condition for the highway alignment and a potential safety issue for the traveling public and the IA DOT. Several factors contribute to this undesirable condition.

The curves used on the higher speed and straighter portions of the US 20 corridor are much flatter than the curves used for this particular crossover. The curves used here were the required minimum 17000' curves so as to not introduce superelevation (banking) into the horizontal alignment and further complicate the driving task for travelers. While these curves meet the minimum radius design standards for not banking the highway, they do introduce relatively sharper curves that now could potentially violate the driver's expectancy of the flatter curves they have experienced until this point in the roadway.

According to the 2004 American Association of State Highway Officials Geometric Design of Highways and Streets (AASHTO Green Book), it is desirable to coordinate the placement of curves in the horizontal alignment with the curves in the vertical profile such that a bend in the road aligns with a hill or crest. Because the location of where the horizontal curves must be placed to develop the crossover is constrained, it forces the curves to not align with either the hills or valleys in vertical alignment. This can create a driver perception issue where the horizontal curves appear sharper than they are and potentially cause a driver to over steer while driving.

There will still be impacts to the water resources on either side of the crossover. On the south side there will still be impacts to the tributary channel as well as a small wetland due to the fill material needed to build the roadway. On the north side there will be impacts to a small portion of a wetland. Additionally, there will be impacts beyond just the roadbed area. This is because heavy equipment will have to operate outside of the final cut and fill areas in order to actually build the roadway. Also a temporary asphalt "run-around" with additional impacts to the water resources will need to be constructed outside of the final limits of construction in order to stage the construction of the road crossover. This run-around is necessary to allow traffic to bypass the area where the connection between the old pavement and the new pavement meet so that traffic can be shifted to accommodate the phases of highway construction. The additional construction staging required to build this crossover also introduces an additional safety risk during the construction process that isn't present by staying on just one side of the existing highway.